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1920-1921  
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San Francisco and Oakland

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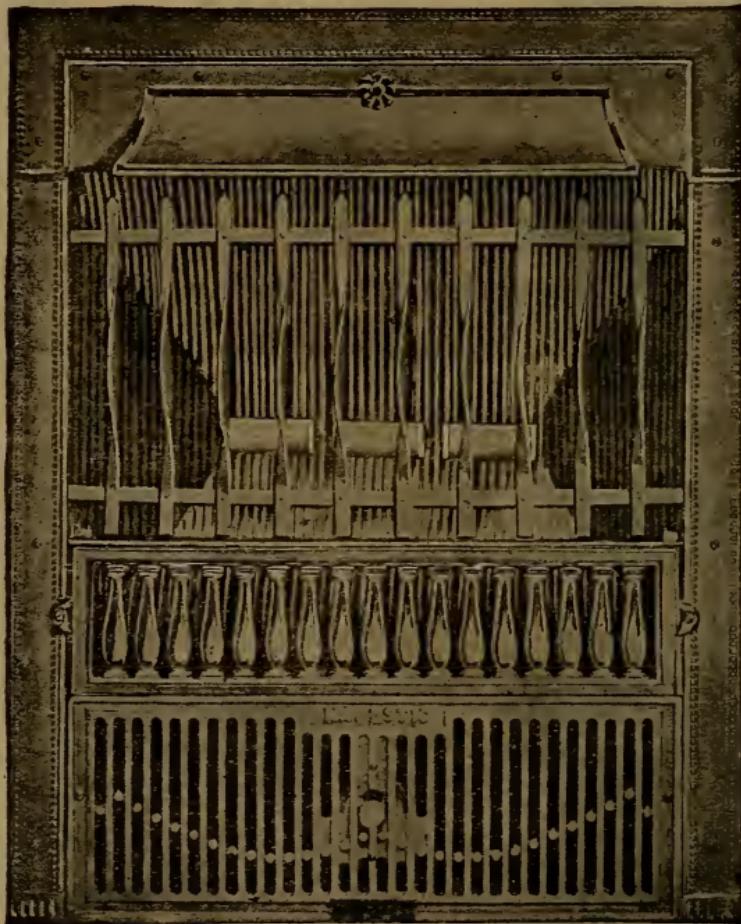
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THREE DESIGNS AND FINISHES

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656 HOWARD STREET San Francisco

# OFFICIAL BUILDING LAWS

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CITY AND COUNTY OF  
**SAN FRANCISCO**  
1921

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PUBLISHED BY  
**DAILY PACIFIC BUILDER**  
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115 Townsend St.

San Francisco

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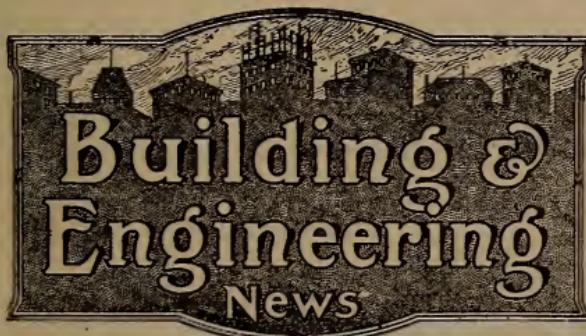
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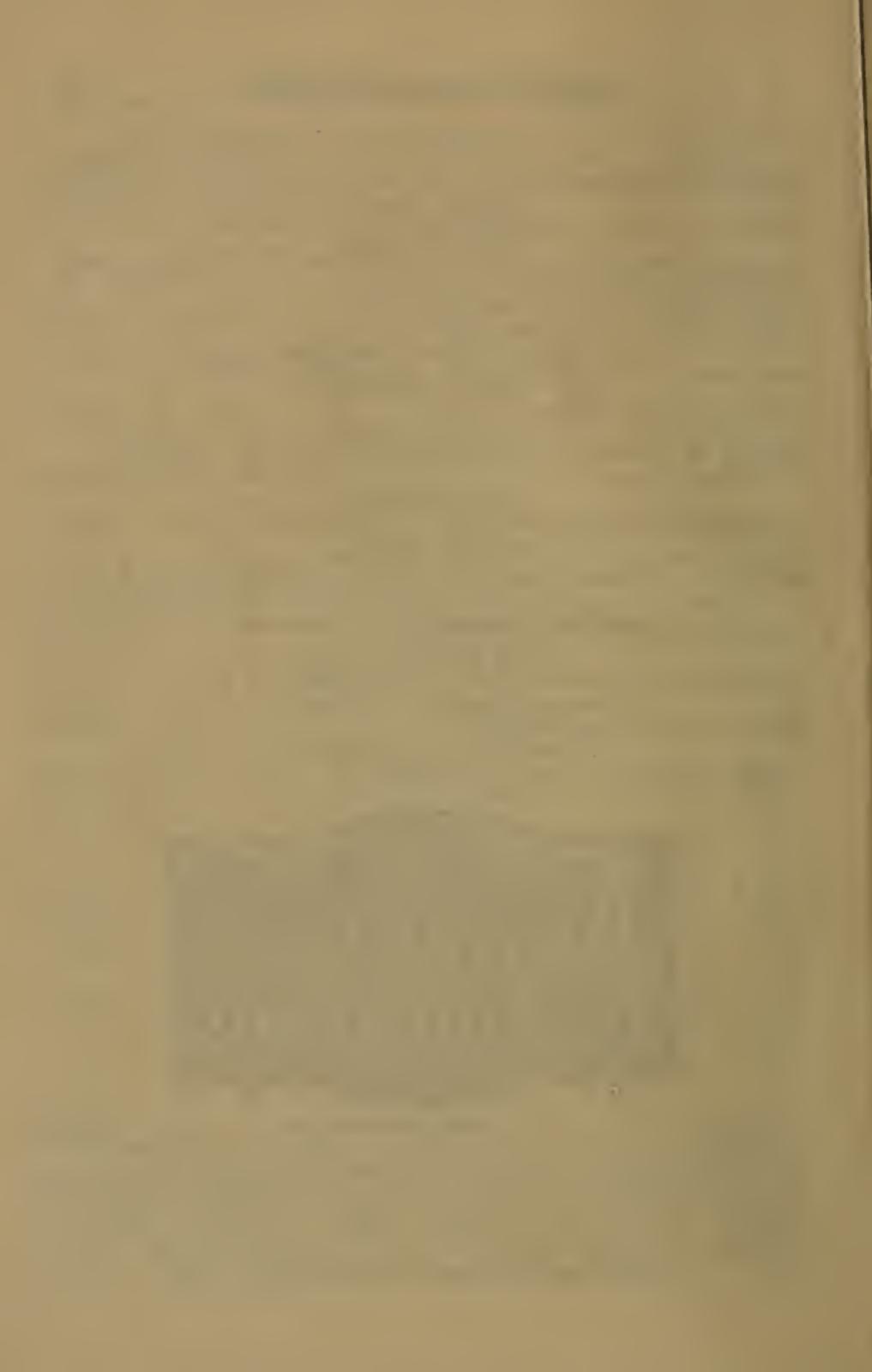
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**560 Mission Street, San Francisco, Cal.**



Official  
**BUILDING LAWS**  
City and County  
of  
**San Francisco, California**

Regulating the construction, erection, enlargement, raising, alteration, repair, removal, maintenance, use and height of buildings; regulating character and use of materials in and for buildings. Establishing fire limits and repealing all Ordinances in conflict with this Ordinance.

Be it Ordained by the People of the City and County of San Francisco as follows:

Section 1. This Ordinance shall be known as "The Building Law" of the City and County of San Francisco.

Section 2. This Ordinance shall apply to all buildings hereafter to be erected, constructed, altered, repaired, raised, added to or built upon within the boundaries of the City and County of San Francisco, except buildings and construction for which permits have been issued by the Board of Public Works prior to the passage of this Ordinance.

**Boundary lines of the areas within which various classes of buildings may be erected.**

**Fire Limits.**

Section 3 (as amended May 10, 1916). That portion of the City and County of San Francisco within the boundary lines of this section hereinafter set forth shall be known as the fire limits within which it shall be unlawful to erect or construct frame or wooden buildings, or to alter, enlarge, repair, add to or build upon any building or buildings except as in this Ordinance otherwise provided, viz.:

The fire limits shall be bounded by a line commencing at the intersection of the shore line of the Bay of San Francisco with the easterly end of the center line of Greenwich street; running thence westerly along the center line of said Greenwich street to its intersection with the center line of Sansome street; thence southerly along the center line of Sansome street to its intersection with the center line of Broadway; thence westerly along the center line of Broadway to the center line of Cordelia street; thence southerly along the center line of Cordelia street to its intersection with the center line of Pacific street; thence westerly along the center line of Pacific street to the center of the crossing of Pacific and Powell streets; thence southerly along the center line of Powell street to the center of the crossing of Powell and Sacramento streets; thence easterly along the center line of Sacramento street to the center line of the crossing of Sacramento and Stockton streets; thence southerly along the center line of Stockton street to a point distant one hundred and thirty-seven and one-half (137½) feet northerly from the northerly line of Bush street; thence westerly parallel with Bush street on a line distant one hundred and thirty-seven and one-half (137½) feet northerly from the northerly line of Bush street to the center line of Van Ness avenue; thence at right angles southerly along the center line of Van Ness avenue to the intersection of the center line of McAllister street; thence westerly along the center line of McAllister Street to the center of the crossing of McAllister and Franklin streets; thence southerly along the center line of Franklin street to the center of the crossing of Franklin and Page streets; thence westerly along the center line of Page street to the center of the crossing of Page and Gough streets; thence southerly along the center line of Gough street to its intersection with the center line of Market street; thence southerly and westerly along the center line of Market street to Valencia street; thence southerly along the center line of Valencia street to the center line of the crossing of Valencia and McCoppin streets; thence at a right angle easterly along the center line of McCoppin street to a point

one hundred and forty-four (144) feet easterly from the easterly line of Valencia street; thence extending in a northerly and easterly direction on a radius of three hundred and ninety-six and eight one-hundredths (396.08) feet to the center line of Stevenson street if produced through private property, and along the center line of Stevenson street to the westerly line of Brady street; thence diagonally in an easterly direction across Brady street to the intersection of the east line of Brady street and the center line of Stevenson street produced and Stevenson street; thence along the center line of Stevenson street in a northeasterly direction to the center line of Twelfth street; thence southeasterly along the center line of Twelfth street to the center line of Otis street; thence in a northerly and easterly direction along the center line of Otis street and Mission street to the center line of the crossing of Mission and Ninth streets; thence in a southerly and easterly direction along the center line of Ninth street to the center line of the crossing of Ninth and Minna streets; thence in a northerly and easterly direction along the center line of Minna street to Sixth street; thence in a southerly and easterly direction along the center line of Sixth street to the center of the crossing of Sixth and Howard streets; thence in a northerly and easterly direction along the center line of Howard street to the center line of the crossing of Howard and First streets; thence in a southerly and easterly direction along the center line of First street to the center of the crossing of First and Folsom streets; thence easterly along the center line of Folsom street to a point 137 feet 6 inches west of the westerly line of Beale street; thence in a southerly direction and parallel with Beale street to a point 275 feet southerly from the southerly line of Harrison street; thence in a westerly direction and parallel with Bryant street to the center line of Fremont street; thence in a southerly direction along the center line of Fremont street to the center line of Bryant street; thence in a westerly direction along the center line of Bryant street to the center line of First street; thence in a southerly direction along the center line of First street to the center

line of Brannan street; thence in a westerly direction along the center line of Brannan street to a point 412 feet 6 inches west of the westerly line of Second street; thence in a southerly direction and parallel to Second street to the shore line of the waters of Bay of San Francisco; thence along the shore line of the waters of the Bay of San Francisco in a northerly and westerly direction to the point of commencement.

#### **Fireproof Roofing Limits.**

Section 4. The roofs of all buildings hereafter constructed within the limits hereinafter in this section described shall consist of fireproof materials, and whenever the covering of the roof or roofs of any building or buildings heretofore constructed within the said limits shall, in the judgment of the Board of Public Works, be or become damaged through fire, decay or otherwise, to the extent of forty (40) per centum of the value of the said covering of the roof or roofs, then the said covering of the roof or roofs shall be reconstructed of or replaced with fireproof materials. Said fireproof materials shall consist of the same materials required for the roof coverings of all buildings erected within the fire limits of the City and County.

Said limits shall be bounded by a line commencing at the intersection of the shore line of the Bay of San Francisco with the northerly end of Van Ness avenue; thence southerly along the center line of Van Ness avenue to Green street; thence westerly along the center line of Green street to Lyon street; thence southerly along the center line of Lyon street to Pacific avenue; thence westerly along the center line of Pacific avenue to its intersection with the southerly line of the Presidio reservation; thence following the southerly line of the Presidio Reservation to Arguello Boulevard; thence southerly along the center line of Arguello Boulevard to California street; thence easterly along the center line of California street to Presidio avenue; thence southerly along the center line of Presidio avenue to Geary street; thence easterly along the center line of Geary street to Broderick street; thence southerly along the center line of Broderick street to Waller street; thence westerly along the center line of Waller

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### PART III.

**Relating to Issuance of Permits, Filing of Plans, Specifications and Statements, Demolition of Buildings, Examination of New Devices and Materials and Interpretation of this Ordinance.**

**Permits Must Be Obtained from the Board of Public Works.**

Section 5. It shall be unlawful for any person, firm or corporation to commence or proceed with the erection, construction, alteration, repair, moving or demolition (restoration of plastering or painting excepted) of any building or other structure either private, public, municipal, State or United States in the City and County of San Francisco unless a permit so to do shall have been first obtained from the Board of Public Works. The application for such permit shall in all cases state the estimated cost of the work.

The City and County of San Francisco, the State of California and the United States Government shall be exempted from the payment of the fees charged for such permit under the provisions of the Building Law.

### Application for Permit.

Section 6. The permit may be applied for and obtained by the owner or lessee direct or acting through an architect, engineer, contractor or other agent.

The application shall state the location of the proposed building or structure. It shall give the name and residence address of the actual owner or owners of the land and of the building or structure, the name and residence address of lessee or lessees, if any, and the name and address of the architect, engineer or designer of the building or structure.

The application shall be made upon blanks furnished by the Board of Public Works and shall conform to the requirements as indicated on the blanks so furnished.

The application shall be filed in duplicate and be accompanied by two complete sets of plans and specifications which shall clearly show all parts of the construction, including a plan of each floor of a new building. One of said sets of plans shall be on cloth.

If said application, plans and specifications are approved, such approval shall be endorsed on each thereof in writing by the Board of Public Works, and one of said applications, together with the set of plans on cloth and one set of specifications, all with such approval endorsed thereon, shall be securely bound together and delivered to the party obtaining the permit who must keep such application, plans and specifications on the premises where such construction is being conducted, open for inspection at all times during such construction, until final inspection is made in accordance with Section 9. The owner shall be responsible for the plans being kept on the building.

The other application, set of plans and set of specifications after being approved and having such approval endorsed thereon in writing by said Board of Public Works, shall be indexed and kept on file by the Board of Public Works in such a manner as to be readily inspected by the public upon application to the chief clerk of the building permit office, and the erection, construction or alteration of said building, structure

or any part thereof when proceeded with shall be constructed in accordance with such approved applications, plans and specifications and any modifications made in plans and specifications shall be subject to further approval, such modifications shall be made to appear in the same form and date of such further approval, shall be endorsed on both the set of plans and specifications and be noted on the applications, filed in the office of the Board of Public Works and kept on the premises where such construction is being conducted.

When the estimated cost of erecting, altering or repairing any building or structure, does not exceed one thousand dollars (\$1,000), the person, firm or corporation proposing to make such improvements shall file with the Board of Public Works in lieu of the plans and specifications hereinafter provided for, a statement in writing setting forth what repairs, alterations or improvements are contemplated, and describing the general character, nature and extent of the same.

### **Issuance of Permit.**

Section 7. Upon the filing of an application in accordance with the requirements of the aforesaid Section 6 the Board of Public Works shall ascertain whether such plans and specifications embody all requirements applicable by law and Ordinance in such case, and if the requirements be met shall issue a building permit to the applicant, after plans for plumbing, lighting, ventilation and other sanitary features have been approved by the Board of Health, giving him permission to erect or alter the building or structure at the place and in accordance with said approved applications, plans and specifications.

Such permit and the approved application plans and specifications must be exhibited to any authorized representative of either the Police, Fire or Health Department or the Board of Public Works or other authorized person making a demand therefor.

The permit for the erection, alteration or repair of any building must be kept on the premises where the erection, alteration or repair of such building is being

conducted.

The Board of Public Works may grant permit for the erection of any part of the building, or any part of a structure, where plans, specifications and detailed statements have been presented for the same before the entire specifications, plans and detailed statements of said building or structure have been submitted.

Any approval which may be issued by said Board pursuant to the provisions of this Ordinance, but under which no work is commenced within six months from the time of issuance, shall expire by limitation, but may in the Board's discretion, be renewed without further charge.

#### **Demolition of Building.**

Section 8. When a building or structure is to be demolished it shall be done in a manner which is approved by and satisfactory to the Board of Public Works. Said owner or lessee shall in all cases notify the Board of Public Works when said building is ready for inspection.

#### **Certificate of Occupancy to Be Issued.**

Section 9. It shall be the duty of the Board of Public Works to make or cause to be made a final inspection and examination of all buildings before any such buildings are occupied, and if such buildings are found to have been erected and constructed in conformity to all the provisions and requirements of this Ordinance, said Board of Public Works shall issue on a printed form provided by the Board of Public Works for that purpose a certificate thereof to the owner or lessee, a duplicate of which said certificate shall be indexed and filed for reference in the office of said Board.

No person, firm or corporation shall occupy any building or structure until such certificate has been issued.

It shall be the duty of the Police Department to stop the occupancy of all buildings that have been erected or altered until certificate of occupancy has been issued by the Board of Public Works.

### Temporary Certificates of Occupancy.

Section 10. The Board of Public Works may issue a certificate of temporary occupancy, allowing the use of a portion or portions of any building, provided said portion or portions of said building has been erected and constructed in accordance with all the requirements of this Ordinance governing the erection and construction of said building.

### Non-Liability of City and County for Damages.

Section 11. Every application for a building permit shall contain an agreement to save the City and County and its officials harmless from all costs and damages which may accrue from use or occupancy of the sidewalk, street or sub-sidewalk space.

### Fees for Permits.

Section 12. The applicant or applicants for such building permit shall pay the Board of Public Works for expenses of inspection and examination of the building and plans and specifications the sum of two dollars (\$2) if the estimated cost of said building, structure, alteration or improvement shall be five hundred dollars (\$500) or less; the sum of three dollars (\$3) if the estimated cost of said building, structure, alteration or improvement shall be more than five hundred dollars (\$500) and less than one thousand dollars (\$1000), and if the estimated cost of said building, structure, alteration or improvement shall exceed one thousand dollars (\$1000), then the sum of three dollars (\$3) for each one thousand dollars (\$1000) of the estimated cost or fraction thereof up to twenty thousand dollars (\$20,000) and sixty cents (60c) for each one thousand dollars (\$1000) of the estimated cost above twenty thousand dollars (\$20,000).

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**Permits for Use of Sub-Sidewalk Space.**

Section 13. Permits shall be granted by the Board of Public Works for the use of the space below the sidewalk upon application, which permits must be made upon blanks and subject to such regulation as the Board of Public Works may devise.

No fee will be exacted for the permit for the use of the sub-sidewalk space, but the Board of Supervisors of the City and County reserves the right to suspend or annul the privilege of maintaining such cellar or vault, or to exact a license or rental for the use thereof, or to apply such sub-sidewalk space, or any portion thereof, to municipal uses.

The granting of a permit to use the sub-sidewalk space shall carry with it the right to excavate the space and to build the necessary retaining walls.

As a guarantee for the proper restoration of any portion of the roadway fronting the same which may be disturbed or injured by reason of the construction of any part of a building or structure, the permittee shall

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TOOLS :: :: STOVES**

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Telephone Market 891      Between 6th and 7th  
**SAN FRANCISCO, CALIFORNIA**

deposit with the Board of Public Works for each and every front foot or fraction thereof of the premises in the front of which the excavation for such cellar or vault is to be made the sum of \$2.50 when the street in front thereof is paved with blocks of asphalt or bitumen on concrete, and \$1.50 when such street is paved with basalt blocks or cobblestones on a sand foundation. Said deposit shall be refunded to the permittee upon the indorsement on the permit issued therefor, of a certificate of the Bureau of Streets certifying to the satisfactory condition of such roadway.

Should the permittee fail to restore any pavement thus injured, the Board of Public Works may, after ten days' notice in writing posted at the building, restore the pavement and pay the cost of such restoration from the deposit.

#### **Permit for Temporary Occupancy of a Public Street.**

Section 14. No person, firm, company or corporation shall place or cause to be placed upon a public street, or any portion thereof, in the City and County of San Francisco, any materials or appliances for use in the construction, alteration, or repair of a building of any kind, or for any other purpose necessitating temporary occupancy of any portion of the public streets, without first obtaining a permit therefor from the Board of Public Works of said City and County.

Such materials and appliances shall not occupy more than one-third of the width of the roadway of the street, and not more than one-half of the width of the sidewalk, and shall be placed thereon under the direction and to the satisfaction of the Board of Public Works, but in no case shall they be placed or caused to be placed on the roadway of any street within four feet six inches of the outer rail of any street railroad track.

The permit aforementioned and required shall be granted only to the owner or lessee or the duly authorized agent of the owner or lessee of the lot upon which a building, or in front of which a sidewalk or other work is proposed to be constructed, altered or repaired, upon the depositing by such owner, lessee or agent with said Board of Public Works the sum of twenty

(20) dollars for each and every fifty (50) feet of the frontage or fraction thereof, of such building or such sidewalk or other work, as a guaranty to the City and County that the permittee will remove, or cause to be removed, all dirt, debris and materials of any kind from the street, to the satisfaction of the said Board of Public Works, immediately upon the completion of the construction, alteration or repair of such building or such sidewalk, or at such times prior thereto, when in the judgment of said Board the public interest or convenience will be subserved by the removal of the same, or any portion thereof. And every permit granted as in this Ordinance provided shall be subject to such guaranty.

The Board of Public Works shall prescribe in the permit granted the time for such occupancy of a street. Upon the failure or neglect of the permittee to remove or cause to be removed to the satisfaction of said Board of Public Works such dirt, debris or materials as aforesaid within five days after being notified so to do by said Board, by a notice posted on the premises, the money so deposited as a guaranty, or so much thereof as may be necessary, shall be used by said Board for the removal of such dirt, debris or materials.

All the materials intended for use in the purposes aforesaid shall be confined to and occupy only such portion of the street as the permit may designate, and all sand, dirt and other materials or debris of any kind shall be prevented from being blown or otherwise moved to any other portion of the street, or from interfering in any way whatever with the carrying on of any business or enjoyment of any property.

No materials of any kind shall be deposited in any gutterway of any street so as in any manner to obstruct the same.

Section 14½. No permit provided for in Section 14 of this Ordinance, to use the sidewalks and streets during the construction of a building, shall be issued by the Board of Public Works unless a fee therefor shall have been paid to said Board of Public Works, equal to one-tenth of 1 per cent of the estimated cost of said building or structure.

### New Devices and Materials.

Section 15. In cases in which it is claimed that any equally good or more desirable mode or manner of construction or material, or device for fireproofing, other than specified in this Ordinance can be used in the erection or alteration of buildings, the Board of Supervisors, upon written application to them for permit to use the same, shall have power to appoint a Board of Examiners consisting of not less than three nor more than five members, one of whom must be an architect, one a civil engineer, and one a builder, each of whom shall have had at least ten (10) years' experience in San Francisco as an architect, civil engineer or builder, who shall take the usual oath of office. Said examiners shall adopt rules and specifications for examining and testing such mode or manner of construction, or material, or device for fireproofing, and furnish a copy of the same to the applicant. The said examiners shall thereupon notify such applicant to submit to such examination and to make tests in the presence of the said examiners, or a majority thereof, according to such rules and specifications. All expenses of such examiners and of such examinations and tests shall be paid by the applicant, and said examiners may require security therefor.

The said examiners shall, after such examination and tests, certify the results and their decision on the said application to the Board of Supervisors, who shall have power, in the event of the examination and tests being satisfactory, to grant a permit to the applicant in accordance with such decision of the said Board of Examiners.

### Interpretation of Ordinance.

Section 16. It is the declared intention of this Ordinance to define limits of construction which shall produce safe buildings or structures. Nothing in this Ordinance shall be construed to prevent those forms of construction being used which will obviously be of greater strength or security than called for by the provisions of this Ordinance.

The Board of Public Works is hereby authorized to

employ, when it deems such service necessary a Consulting Engineer of ten years' experience to assist the Department of Buildings in the interpretation of this Ordinance, the examination of plans and the inspection of buildings or structures.

## PART IV.

### DEFINITION OF TERMS.

#### **Building or Structure.**

Section 17. For the purposes of this Ordinance the words "Building" or "Structure" define any construction the arrangement of which may affect the health, safety or general welfare of man or animals.

#### **Alterations.**

"Alterations" means any change or addition.

#### **Repairs.**

"Repairs" means the reconstruction or renewal of any existing part of a building, or of its fixtures or appurtenances by which the strength of the fire risk is not affected or modified.

#### **Party Wall.**

"Party wall" means a wall used, or built to be used, in common by two or more buildings.

#### **Partition Wall.**

"Partition wall" means any interior wall other than a division wall.

#### **Bearing Wall.**

"Bearing wall" means any wall carrying all or part of the interior load of a building.

#### **Curtain Wall.**

"Curtain wall" means any wall supported at intervals on the frame of a building, or a wall which is self-supporting only on the exterior of a building.

#### **Exterior Wall.**

"Exterior wall" means every outer wall or vertical enclosure of a building.

**Fire Wall.**

The term "fire wall" shall apply to all walls built for the purpose of fire resistance. The term also applies to that portion of walls above roof surface.

**Retaining Wall.**

The term "retaining wall" shall apply to all walls constructed for the purpose of holding back or supporting earth.

**Division Wall.**

The term "division wall" means any wall other than an exterior wall, or a party wall, which extends the full height of a building and through the roof, and such walls shall be constructed in all respects as provided for party walls. Such walls may be bearing walls or self-supporting only.

**Thickness of Wall.**

The term "thickness of a wall" means the minimum thickness of such wall measured between any two floors, or between floor and ceiling or roof.

**Cellar.**

The term "cellar" means a lower story of which one-half or more is below the level of the curb line of the street, or streets, on which it faces, or of the general level of the ground.

**Basement.**

The term "basement" means a lower story of which a part, but less than one-half is below the level of the curb line of the street or of the general level of the ground.

**Story.**

The term "story" means (for the calculation of the thickness of foundation and size of studding) the vertical distance from floor to ceiling. The minimum height of a story shall be seven and one-half feet.

**Terra Cotta.**

The term "terra cotta," when used alone, shall apply to the hand-molded, baked clay material used for architectural decoration and construction of walls.

**Hard Terra Cotta Fireproofing.**

The term "hard terra cotta fireproofing" shall apply to all clay fireproofing material that is manufactured without sawdust.

**Semi-Porous Terra Cotta Fireproofing.**

The term "semi-porous terra cotta fireproofing" shall apply to all clay fireproof material having fifty per centum of sawdust measured by volume, mixed with fifty per centum of clay.

**Steel Frame Construction.**

The term "steel frame construction" shall apply to every metal frame used for the support of a building. The term "steel frame" shall include all the cast and wrought iron, as well as steel, used in the construction.

**Girders.**

The term "girders" in floor construction shall apply to all beams that are used for the support of other beams.

**Reinforced Concrete Construction.**

The term "reinforced concrete construction" shall apply to all rock or gravel concrete used in the construction of posts, beams, lintels, girders, arches, walls and floors which are strengthened by iron or steel mesh, wires, cables, bars or shapes embedded in the concrete in such a manner that the two materials act in unison in resisting stresses due to external loads, the steel resisting all tension stresses and assisting in the resistance of shearing stresses.

**Dead Load.**

The term "dead load" shall apply to and include the weight of the walls, floors, etc., of a building, including all permanent construction.

**Live Load.**

The term "live load" shall apply to and include all weights in a building other than dead loads. Such loads shall include temporary construction, furniture and people.

**Ton.**

The term "ton" means 2,000 pounds.

**Masonry.**

The term "masonry" shall apply to brick, stone, interlocking hollow tiles, concrete or reinforced concrete construction.

**Portable Steam or Hot Water Radiators**

A portable steam or hot water radiator wherein gas or electricity is used for producing heat, is any gas or electrically heated heating device, constructed and equipped as required in Section 252 of this Ordinance, wherein self-contained, tightly-enclosed water is used to radiate heat.

**Theatre.**

A "theatre" is a building which contains seats for the public, and to which an admission fee is charged, and in which movable scenery is used.

**Office Building.**

An "office building" is a building divided into rooms intended and used for office purposes, and no part of which shall be used for living purposes, except by the janitor and his family.

**Warehouse.**

A "warehouse" is a building used exclusively for the storage of merchandise.

**Hospital and Sanitarium.**

A "Hospital or sanitarium" is a building used for the keeping and care of sick, invalids and infirm people, and having accommodation for more than five such people.

**Hotel.**

A "hotel" is a building or part thereof intended, designed or used for supplying food and shelter to residents or guests and having a general public dining room or cafe, or both, and containing more than fifteen guests' rooms.

**Lodging House.**

A "lodging house" is a building containing more than fifteen rooms in which persons are or may be accommodated with sleeping apartments for hire, by the day, week or month.

### Dwelling.

A "dwelling" is a building which shall be intended or designed for or used as the home or residence of not more than two separate and distinct families or households, and in which not more than fifteen rooms shall be used for the accommodation of boarders, and no part of which structure is used as a store or for any business purpose. Two or more such dwellings may be connected on each story and used for boarding purposes, provided the halls and stairs of each house shall be left unaltered and kept open and in use as such.

### Flats.

"Flats" is a building of two or more stories containing separate self-contained dwellings, each dwelling having an independent entrance on the level of the street or from an outside vestibule on the level of the first floor.

### Tenement House and Apartment House.

A "tenement house or apartment house" is any building coming within the definition of a tenement house as defined in the State Tenement House Law.

### Yard.

A "yard" is an open, unoccupied space on the same lot as the house, between the extreme rear line of the house and the rear line of the lot.

### Court.

A "court" is an open, unoccupied space other than a yard on the same lot as the building. A court extending to the yard or street is an outer court. A court surrounded on all sides by a building on the same lot is an inner court. A court extending to the lot line is a lot line court.

### Shaft.

A "shaft" in a building is any open space other than a court, extending through the building for two or more stories, exterior or interior, whether for light, air, elevator, dumb-waiter or any other purposes. A vent shaft is one used solely to ventilate or light, or both, a watercloset compartment or bathroom.

### **Stair Hall.**

A "stair hall" includes the stairs, stair landings, hallways or passages through which it is customary to pass in going from the entrance to the roof.

### **Corner Lot.**

A "corner lot" is a lot situated at the corner of two streets or street and a public alley not less than 16 feet in width.

### **Measurements for Height, Length and Width of Buildings and Seating Capacity.**

Section 18. For the purpose of this Ordinance the greatest horizontal linear dimension of any building shall be its length, and the next greatest horizontal linear dimension its width.

The height of buildings shall be measured from the curb level at the center of the main front of the building to the top of the highest point of the roof beams in case of flat roofs, and for high pitched roofs the average height of the gable shall be taken as the highest point of the building.

For a building erected upon a street corner, the measurements shall be taken from the curb level opposite the center of either front.

When the ground upon which the walls of a structure are built is above the street level, the average level for the ground adjoining the walls may be taken instead of the curb level for the height of such structure.

In computing the seating capacity of any room or building in which seats are not fixed an allowance of eight square feet of floor area shall be made for each person and all space between the walls or partitions of such room or building shall be measured in this computation.

## PART V.

### MATERIALS, LOADS, ALLOWED STRESSES AND GENERAL PROVISIONS FOR CONSTRUCTION.

#### **Brick.**

Section 19. The brick used in all buildings shall be good, hard, well-burnt brick, or some approved form of hard sandlime or cement brick.

All materials must be of good quality.

When old bricks are used in any wall they shall be thoroughly cleaned before being used, and shall be whole and good, hard, well-burnt bricks.

#### **Sand.**

Section 20. The sand used for mortar in all buildings shall be clean, grit sand, free from loam and dirt.

#### **Gravel.**

Section 20½. Gravel shall be composed of clean pebbles or hard, homogeneous rock, of graded sizes and free from dirt or other foreign matter.

#### **Lime Mortar.**

Section 21. Lime mortar shall be made of one part lime and not more than five (5) parts of sand, measured dry. All lime used for mortar shall be thoroughly burnt, of good quality, and properly slaked before it is mixed with the sand. Such mortar must be mixed at least five (5) days before using.

#### **Portland Cement.**

Section 22. This term is applied to the finely pulverized product resulting from the calcination to incipient fusion of an intimate mixture of properly proportioned argillaceous and calcareous materials, and to which no addition greater than 3 per cent has been made subsequent to calcination.

The specific gravity of the cement, ignited at a low red heat, shall not be less than 3.10, and the cement shall not show a loss on ignition of more than 4 per cent.

It shall leave by weight a residue of not more than 8 per cent on the No. 100, and not more than 25 per cent on the No. 200 sieve.

It shall not develop initial set in less than thirty minutes, and must develop hard set in not less than one hour, nor more than ten hours.

The minimum requirements for tensile strength for briquettes one inch square in section shall be within the following limits, and shall show no retrogression in strength within the periods specified:

#### Neat Cement.

Age	Strength
24 hours in moist air.....	175 lbs.
7 days (1 day in moist air, 6 days in water)..	500 "
28 days (1 day in moist air, 27 days in water)..	600 "

#### One Part Cement, Three Parts Standard Sand.

7 days (1 day in moist air, 6 days in water)..	200 lbs.
28 days (1 day in moist air, 27 days in water)..	275 "

#### Cement Mortar.

Section 23. Cement mortar shall be made of cement and sand in the proportion of one part of cement and not more than three parts of sand, and shall be used before the initial set has taken place. The cement and sand are to be measured and thoroughly mixed before adding water.

#### Cement and Lime Mortar.

Section 24. Cement and lime mortar, mixed, shall be made on one (1) part cement to not more than six (6) parts of lime mortar, measured in a box.

#### Concrete.

Section 25. Concrete shall be made of Portland cement sharp, clean sand and broken stone, broken brick, terra cotta, cinders or gravel. Concrete made with broken stone shall be termed rock concrete. Rock concrete for foundations shall be composed of not less than one part Portland cement, three parts sand and five parts broken stone of main dimensions not more than two inches. Rock concrete for floors, backing of ashlar, fireproofing and reinforced walls shall be composed of not less than one part Portland cement, two parts sand and four parts broken stone of major dimensions not exceeding one inch. Gravel of graded size may be used in place of broken stone in all rock concrete.

Concrete made of broken brick, terra cotta or cinders shall be mixed in the proportion of not less than one part of Portland cement, two parts of sand and four parts of broken brick, terra cotta or cinders, as the case may be. Such concrete shall only be used for floors, floor slabs and fireproofing. All concrete shall be mixed by hand and shall be turned not less than twice dry and twice wet or may be mixed by machine.

### **Reinforced Concrete.**

Section 26. Reinforced concrete shall be as described under "Reinforced Concrete" in Class "B" buildings.

### **Brick Masonry.**

Section 27. All brick masonry shall be of brick laid in cement mortar or lime and cement mortar.

All bricks shall be well wet before laid and shall have close joints filled with mortar.

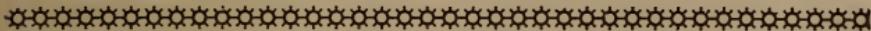
In all brick walls at least every sixth course shall be a heading course.

The thickness of brick walls shall be as specified under the different classes of buildings.

In no case shall any wall or walls of any building be carried up more than five (5) feet in advance of any other walls unless proper provisions for suitable anchors and ties are made. The front, rear, side and party walls shall be properly bonded together, or they shall be anchored to each other, every six (6) feet in their height by wrought-iron tie anchors not less than one and one-half (1½) by three-eighths (¾) of an inch in size, and not less than thirty-eight (38) inches in length. The side anchors shall be built into the side or party walls not less than sixteen (16) inches, and into the front and rear walls, so as to secure front and rear walls to the side or party wall, when not built and bonded together.

All exterior piers shall be anchored to the beams or girders on the level or each tier.

The walls and beams of every building, during the erection or alteration thereof, shall be stoutly braced from the beams of each story, and when required shall also be braced from the outside, until the building is enclosed.



# California Brick Company Livermore Fire Brick Works

604 MISSION STREET

City Yard, 7th and Hooper Sts., San Francisco

Telephone  
**SUTTER**  
4 3 4 5

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*Buff Pressed Brick*

*Fire Brick and Tile*

*Hollow Building Tile*

*Hollow Partition Tile*

*Old Gold Pressed Brick*

*Architectural Terra Cotta*

*Red Ruffle Face Brick*

*Ground Fire Brick and Clay*

*Enameled Brick*

*Paving Brick*

*Farm Drain Tile*

*Bungalow Building Blox*



The walls and the piers of all buildings shall be properly and solidly bonded together with close joints filled with mortar. They shall be built to a line and carried up plumb and straight. The walls of each story shall be built up the full thickness to the top of the beams above. All walls shall be built solid throughout except for flues.

### **Walls and Piers.**

Section 28. In all walls of the thickness specified in this Ordinance the same amount of material may be used in piers and buttresses. Said piers and buttresses shall not be more than twenty (20) feet on centers, and walls between said buttresses shall not be less than thirteen (13) inches thick.

### **Brick Piers.**

Section 29. The total load on such brick piers shall not exceed seven tons per square foot if laid in lime mortar, ten tons per square foot if laid in lime and cement mortar, and fifteen tons per square foot if laid in cement mortar. The area of cross section shall be net and no pier carrying a load shall have an unsupported length greater than ten times its least horizontal dimension.

### **Ashlar Facing.**

Section 30. Stone used for the facing of any building and known as ashlar shall not be less than four (4) inches in thickness.

Stone ashlar shall be anchored to the backing, which shall be of such thickness as to make the walls, exclusive of the ashlar, conform in thickness with the requirements of this Ordinance, provided that if the ashlar be at least eight (8) inches thick, and bonded into the backing, it may be counted as part of the thickness of the wall.

All ashlar stone, unless bonded, shall be strongly and securely anchored to the wall with iron anchors laid into the stone at least one (1) inch.

Iron ashlar plates used in imitation of stone ashlar on the face of a wall shall be backed with the same thickness of masonry as for stone ashlar.

The backing of all stone ashlar shall be laid with cement mortar or cement and lime mortar mixed, but the back of the ashlar may be parged with lime mortar to prevent discoloration of the stone.

#### **Facing.**

Section 31. Where brick facing is used on a building of more than one story in height with other than brick walls, the minimum thickness of said facing shall be eight inches, and the facing shall have a full header every seventh course.

Frame buildings may be veneered with a four-inch brick wall, provided that each brick in every fourth course be securely anchored to the frame with corrugated metal ties or 20d wire nails.

#### **Increased Thickness of Walls for Buildings of Great Depth.**

Section 32. Where any building without a cross-wall or buttress exceeds a depth of one hundred and sixty (160) feet, the side or bearing walls thereof shall be increased in thickness for (4) inches more than is prescribed in this Ordinance for the thickness of walls for each 100 feet or fraction thereof of such excess depth.

#### **Reduced Thickness for Interior Walls.**

Section 33. Where interior cross-walls are used they may be made four (4) inches less in thickness than exterior walls, provided they are self-supporting only.

#### **Walls Upon Steel Supports.**

Section 34. Walls of street fronts or courts may be carried on steel columns and girders and they shall be of the thickness required at the story at which they commence.

#### **Increasing Height of Walls.**

Section 35. When it is desired to increase the height of existing walls of the thickness required by this Ordinance the weight of the additional walls shall be carried on a frame of steel girders and columns, securely anchored to the existing wall and extending to an independent foundation. Lining of walls to support additional loads is hereby prohibited.

### Walls of Buildings Now in Course of Construction.

Section 36. Any building, the erection of which was commenced in accordance with the specifications and plans submitted to and approved by the Department of Public Works prior to the passage of this Ordinance, if properly constructed and in safe condition, may be completed, or built upon, in accordance with the requirements of the law as to thickness of walls, in force at the time such specifications and plans were approved.

### Existing Party Walls.

Section 37. Walls heretofore built for or used as party walls, whose thickness at the time of their erection was in accordance with the requirements of the then existing laws, but which are not in accordance with the requirements of this Ordinance, may be used, if in good condition for the ordinary uses of party walls, provided the height of the same be not increased.

### Parapet or Fire Walls.

Section 38. All exterior division or party walls shall have parapet walls of thickness not less than that of the wall of the story next below, carried not less than three (3) feet above the roof, and coped with stone, terra cotta, cast iron or cement.

When one (1) parapet wall of a building rises above an adjoining wall of said building the same shall be braced by a buttressed return (of the thickness required for the parapet walls) the length of which, at an angle of 45 degrees from its top, shall equal the difference in height of the two walls.

Walls facing on streets not less than forty (40) feet in width, where the continuous pitch of the roof (from its ridge to the crown mould of a cornice projecting not less than eighteen (18) inches) is not less than twenty (20) degrees, are exempt from the requirements of this section.

Such walls may be stepped to follow slope of roof.

Parapet or fire walls over four (4) feet in height shall have a 3 inch by 3 inch continuous steel angle built into the wall not less than one (1) foot from the top of wall. There shall be connected to this angle

at intervals of not less than twelve (12) feet  $\frac{3}{4}$ -inch rods or other approved anchors extending back and down to the roof and fastened thereto.

### Plain Concrete Walls.

Section 39. Walls built of concrete without reinforcement shall be of the same thickness and under the same conditions as brick walls.

### Reinforced Concrete Walls and Piers.

Section 40. Reinforced concrete walls and piers shall be constructed in accordance with Sections of this Ordinance relating to Class "B" buildings.

### Recesses, Chases and Flues in Walls.

Section 41. In buildings that do not exceed four (4) stories in height above ground-floor level, recesses for stairways and elevators may be allowed in the walls, provided they are not more than 8 feet 0 inches in width of recess, and in the same wall, do not occur nearer than 30 feet 0 inches on centers.

The wall forming the back of such recess must be at least 13 inches in thickness for its entire distance from basement floor to top of wall, a total of five (5) stories.

For buildings of more than four stories in height, the wall forming the back of the recess may be 13 inches in thickness for the upper five (5) stories but must be at least 17 inches in thickness for any further lower stories and for the basement.

The usual bond-iron shall be carried through backing wall of recess of each story level, and securely anchored at ends, or to the adjoining bond-iron.

A chase for water or other pipes shall not be made in any pier, unless said pier is at least four (4) inches more in thickness than is required for its kind and height of building, and in a wall the chase for such pipes shall not exceed one-third (1-3) the thickness of such wall, nor have less than eight (8) inches of wall at back of chase. The chases around such pipe or pipes shall be filled with incombustible material for a distance of one (1) foot at top and bottom of each story.

No horizontal chase for pipes shall exceed seven (7) feet in length, and such chase shall, after pipes are in place, be filled solid with concrete, or brick and ce-

ment mortar. There shall be a space of at least two (2) feet between any chase and a flue and a space of at least four (4) feet between any two (2) chases or between a chase and recess.

The aggregate area of recesses and chases in any wall shall not exceed one-fourth of the whole area of the face of the wall in any story.

If any horizontal section through any part of any bearing wall in any building shows more than thirty (30) per centum of area of flues, chases, recesses and openings in a length of ten feet, the said wall shall be increased four (4) inches for every fifteen (15) per centum or fraction thereof of flue chase, recess and opening area in excess of thirty (30) per centum.

### Arches and Lintels.

Section 42. Openings for doors and windows in all brick, stone or concrete buildings shall have good and sufficient arches of stone, brick, concrete or terra cotta, well built and keyed and with good and sufficient abutments; or the opening shall have lintels of stone reinforced concrete or steel of sufficient strength, which shall have a bearing at each end of not less than five (5) inches on the wall. The inside lintel may be of cast iron, wrought iron or steel, and in such case stone blocks or cast iron or steel plates shall be required at the ends where the lintel rests on the walls except when the opening is less than six (6) feet in width. Cast iron lintels shall not be used over openings exceeding eight (8) feet in width.

All masonry arches shall be capable of sustaining the weight and pressure which they are designed to carry. Tie rods shall be used where necessary to secure stability.

### Piles.

Section 43. Timber or reinforced concrete piles may be used for the foundation of buildings or structures.

Timber piles shall be at least seven inches in diameter at the small end and shall be cut off below standing water line.

Timber piles may be capped with concrete at least 12 inches thick or with timber at least 12 inches thick and drift bolted to each pile, but all timber shall be

below standing water line. There shall be a clear distance of at least one foot between any part of adjacent piles. Timber piles driven to rock or to refusal may be loaded not to exceed five hundred (500) pounds per square inch of middle section area. Timber piles driven in yielding material may be loaded not to exceed one and one-half tons per inch of diameter of middle section, but such piles shall be over twenty feet long and none such shall be loaded to exceed twenty-five tons.

Reinforced concrete piles may be built in place or driven after building by water jet or by hammer if head is protected from injuries. They shall be built in accordance with the provisions for the construction of reinforced concrete in Class B Buildings as far as such provisions apply. The ratio of length to least cross sectional dimensions at the center shall not exceed 25. Reinforced concrete piles shall not be loaded to exceed 350 pounds per square inch of concrete at middle section.

There shall be a clear space of at least one foot between any part of adjacent piles.

### Timber.

Section 44. All timber used in construction of buildings shall be free from large, loose or rotten knots, wind shakes and other defects.

### Table of Allowed Unit Stresses.

	White Pine	Douglas Spruce	Oregon Yellow Fir	Washing- ton or Red Fir	Red- wood
Tension with grain....	700	1,200		1,000	700
Tension across grain..	50		200	150	40
Compression with grain end bearing....	800		1,600	900	800
Columns under fifteen Diameters .....	700		1,000	800	700
Compression across grain .....	200		300	250	200
Transverse extreme fibre stress .....	700		1,600	800	750
Modulus of elasticity..	500,000		700,000	550,000	350,000
Shearing with grain....	100		150	125	100
Shearing across grain	500		750	600	400

### **Timber Columns.**

Timber columns of Oregon pine of a length greater than fifteen diameters shall have an allowed stress per square inch not exceeding that given by the formula:

$$1300 - 20 \text{ L/D.}$$

where L equals length

and D equals least side of diameter.

### **Wrought Iron.**

Section 45. All wrought iron shall be uniform and fibrous. It shall have an ultimate tensile resistance of not less than 48,000 pounds per square inch, and elastic limit of not less than 24,000 pounds per square inch, and an elongation of 20 per centum in eight inches when tested in small test pieces.

### **Steel.**

Section 46. All structural steel used in buildings shall be free from seams, flaws, cracks, defective edges or other defects, and shall have a smooth, uniform finish.

All structural steel used in beams and columns and in other large members shall have an ultimate tensile resistance of from 60,000 pounds to 70,000 pounds per square inch, an elastic limit of not less than one-half of its ultimate strength and a percentage of elongation in eight inches equal to 22 per centum. Such steel shall also bend 180 degrees to a diameter equal to the thickness of the piece tested without fracture on the outside of the bent portion when tested in a test piece.

Rivet steel shall have an ultimate resistance of from 48,000 pounds to 58,000 pounds per square inch, an elastic limit not less than one-half of its ultimate strength, and a percentage of elongation in eight inches equal to 26 per centum.

### **Cast Steel.**

Section 47. Cast steel shall have an ultimate strength of from 60,000 to 70,000 pounds per square inch, an elastic limit equal to 45 per cent of its ultimate resistance, and an elongation in two inches of 18 per centum.

### **Unit Stresses.**

Section 48. Unit stress allowed on steel members shall not exceed the following:

**Direct Compression.**

(Pounds per square inch)

Rolled steel .....	16,000
Cast steel .....	16,000
Wrought iron .....	12,000
Steel pins, rivets (bearing) .....	20,000

**Direct Tension.**

(Pounds per square inch)

Rolled steel, net section .....	16,000
Cast steel, net section .....	16,000
Wrought iron, net section .....	12,000

**Direct Shear, Net Section.**

(Pounds per square inch)

Rivets and pins (steel) .....	10,000
Field rivets (steel) .....	8,000
Field rivets (iron) .....	6,000
Steel web plates .....	9,000
Wrought iron plates .....	7,000

**Extreme Fibre Stress in Bending.**

(Pounds per square inch)

Rolled Beams .....	16,000
Riveted girders, net section of flanges .....	15,000

**Steel Columns.**

Section 49. In steel columns the dead and live load stresses together shall not exceed in any case 13,500 pounds per square inch. If the thickness of any metal in the body of the columns is less than 5-16 inch, the stresses shall not exceed 12,000 lbs. per square inch. When columns have a length greater than 30 times the least radius of gyration the allowed stress in pounds per square inch shall not exceed that given by the formula:

$$15,000 - 50 L-r,$$

where L equals length in inches

and r equals least radius of gyration in inches.

An increase of 50 per centum above the allowed dead and live load stress may be used for wind stresses. Columns subjected to cross-bending by wind or eccentric loading shall have additional area to provide for the stresses, the eccentric loading being calculated as dead load and the wind provided for as above. The area of metal thus obtained for wind, cross-bending

and eccentric loading shall be added to the area provided for dead and live load to obtain the total metal in columns. No column shall have unsupported a length greater than 120 times the least radius of gyration.

### Steel Plate Girders.

Section 50. All plate girders shall be provided with stiffeners at the points of support, and under concentrated loads, intermediate stiffeners shall also be used at distances apart equal to the depth of the girder, providing the shearing stresses "S" in pounds per square inch exceed that given by the following formula:

$$S \text{ equals } \frac{15,000}{d^2}$$

$$1 \text{ plus } \frac{3000 t^2}{}$$

where  $d$  equals clear distance out to out of flange angles and  $t$  equals thickness of web in inches.

### Cast Iron.

Section 51. All cast iron castings shall be made of clean, tough gray iron. They shall be free from injurious blow-holes, cold-shuts and cinder spots. Sample bars one inch square cast in sand molds, in a span of twelve inches, shall bear a central load of 2,400 pounds with a minimum deflection of one-tenth of an inch before breaking. Unit stresses on cast iron shall not exceed 16,000 pounds per square inch in compression and 3,000 pounds per square inch in tension.

### Cast Iron Bases.

Section 52. Cast iron bases used to distribute the loads of columns upon the foundations shall be of not less than  $\frac{3}{4}$ -inch metal. The tops of bases shall be planed and the columns bolted thereto.

### Cast Iron Columns.

Section 53. Columns of cast iron shall be of round or rectangular section, but no column shall be used less than five inches in diameter, or of side of rectangle less than five inches. No cast iron column shall have an unsupported length of more than twenty times its

least lateral dimensions or diameter, except when forming the side of a staircase or elevator enclosure.

No cast iron column shall be subjected to a greater stress per square inch than

8000

$L^2$

$$1 \text{ plus } \frac{800}{800 d^2}$$

for round columns where  $L$  is the length and  $d$  is the outside diameter in inches; and

8000

$L^2$

$$1 \text{ plus } \frac{1067}{1067 S^2}$$

for rectangular columns, where  $L$  is the length and  $S$  is the least side of the rectangle in inches.

The top and bottom flanges, seats and lugs shall be of ample strength, reinforced by fillets and brackets; they shall not be less than one inch in thickness when finished.

The interior space of cast iron columns shall be in no case filled with any material.

All columns shall be faced at the ends to a plane surface at right angles to the axis of the column.

Where cast iron columns are placed vertically one on top of another, they shall be securely bolted together with at least four  $\frac{3}{4}$ -inch bolts, at the joints, through flanges cast on the columns. In such cases the diameter shall not vary more than 2 inches between any two columns.

The metal of the shaft of the lower column shall be increased in thickness at the top to give full bearing to the metal of the shaft of the upper column. This shall be done by tapering the metal for at least 6 inches. A joint plate at least 1 inch thick may be used in place of this taper.

The thickness of metal shall not be less than one-twelfth of the diameter or of the greatest lateral dimension of cross-section, but never less than three-quarters of an inch.

Whenever the core of a cast iron column has shifted more than one-fourth the thickness of the shell, the strength shall be computed assuming the thickness of metal all around equal to the thinnest part, and the columns shall be condemned and rejected if this computation shows the strength to be less than required by this code.

Wherever blow-holes or imperfections are found in a cast iron column which reduces the area of the cross-section at that point more than ten per cent, such column shall be rejected.

Cast iron posts or columns not cast with one open side or back, before being set up in place, shall have a three-eighths of an inch hole drilled in the shaft of each post or column, by the manufacturer or contractor furnishing the same, to exhibit the thickness of the castings; and any other hole or holes of a similar size which the Inspector of Buildings may require, shall be drilled in the said posts or columns by the said manufacturer or contractor, at his expense.

#### Loads.

Section 54. The dead loads in buildings and structure shall consist of the actual weight of the walls, roofs, floors, partitions and all permanent construction.

The live or variable loads shall consist of all loads other than dead loads.

Floors and supports shall be designed to safely carry not less than the following loads per square foot of floor area in addition to the dead load:

Dwellings, office floors, apartment houses, tenement houses, hotels and hospitals, forty (40) pounds.

School rooms and theatres with fixed desks and seats, stables and carriage houses, seventy-five (75) pounds.

Garages, automobile salesrooms, light machine shops and department stores, one hundred (100) pounds.

All floor slabs and beams in garages, automobile salesrooms, light machine shops, department stores and office buildings shall be able to carry a 4000-pound concentrated load.

Halls of public assemblage, without fixed seats, halls of schools, theatres and hospitals, ordinary stores and

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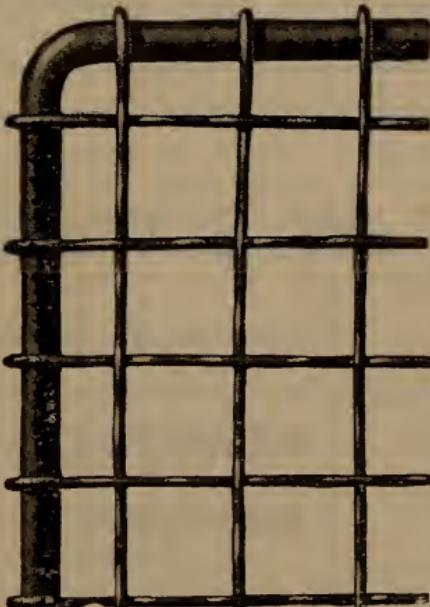
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# Wire Work

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Cast Iron & Wrought  
Iron Stairs  
Lintels      Columns  
Fire Escapes



Boiler Breechings  
Steel Tanks  
Conveyor Frames  
Steel Sash  
Smoke Stacks



See also Pages 100, 141 and 153

floors of light manufactories, warehouses for light storage as furniture or other bulky materials, one hundred and twenty-five (125) pounds.

Stores with heavy loads, stack rooms of libraries, warehouses, ordinary manufactories, two hundred and fifty (250) pounds.

All sidewalks, one hundred fifty (150) pounds.

The strength of factory floors intended to carry running machinery and any other building intended to carry heavy or special loads shall be increased above the minimum given in this section, as may be required by the Board of Public Works.

The roofs of all buildings having a pitch of less than twenty degrees shall be proportioned to bear safely thirty pounds upon every superficial foot of their surface in addition to the weight of materials composing the same. If the pitch be more than twenty degrees the live load shall be assumed at twenty pounds upon every superficial foot measured upon a horizontal plane.

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All beams or joists in the building shall be proportioned to carry the full dead and live load. In buildings used for offices, dwellings, apartment-houses, hotels, lodging-houses, hospitals, schools, halls, theatres, garages, automobile salesrooms, light machine shops and department stores, all girders shall be proportioned to carry the full dead load and at least eighty per cent of the required live load, and the column shall be proportioned to carry the full dead load and sixty per cent of the required live load. For the purpose of reducing the live load, all beams supporting over 150 square feet of floor area may be considered as girders.

In buildings used for warehouses, stores and libraries, all beams, girders and columns shall be designed to carry the full dead and live load.

Section 55. The weight placed upon any of the floors of any building shall be safely distributed thereon. The Board of Public Works may require the owner or occupant of any building or of any portion thereof to redistribute the load on any floor or to lighten such load where it deems it necessary so to do. A tablet shall be permanently placed on each floor of each building used for commercial purposes giving the live load per square foot for which the building was designed; such tablet shall be placed in a conspicuous position.

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### Weight of Materials.

Section 56. The following weights per cubic foot shall be used in calculating the dead loads:

Brick work .....	125	pounds
Concrete rock or gravel .....	145	"
Concrete of cinders .....	100	"
Steel .....	490	"
Cast iron .....	450	"
Redwood .....	48	"
Pine and fir .....	40	"
Sandstone .....	156	"
Granite and marble .....	165	"
Terra cotta .....	100	"
Water .....	62½	"
Asphaltum .....	100	"
Plastering, dry .....	100	"
Sand and gravel, dry .....	100	"
Sand and gravel, wet .....	130	"

The weight of other materials shall be determined from standard authorities or directly by the Board of Public Works from samples.

### Foundations and Loads on Soils.

Section 57. All foundations shall be calculated for the full column loads obtained by the loads given in Section No. 54 of this Ordinance. Soils carrying foundations shall not be loaded more than the following number of tons per square foot:

	Tons
Soft clay .....	1
Sand and clay mixed .....	2
Firm dry clay .....	3
Hard clay .....	4
Loam or fine dry sand .....	3
Compact sand .....	4
Coarse gravel .....	6
Shale rock .....	10
Hard rock .....	20

The Board of Public Works may make investigation of special forms of foundations and issue permits for such, if approved. They may call for a test of soils, which must be made by the owner in such manner as the said Board may provide.

### Unit Loads on Masonry.

Section 58. The following unit loads per square foot must not be exceeded:

Brick work lime mortar .....	7 tons
Brick work cement and lime mortar.....	10 "
Brick work cement mortar .....	15 "
Concrete .....	20 "
Granite .....	28 "

### Foundations on Piles.

Section 59. Walls, columns and other loads may rest upon a foundation on piles, as provided in Section 43 of this Ordinance.

### Foundations on Rafts.

Section 60. Buildings not over two stories in height may be founded on timber rafts made up of at least three layers of four-inch plank spiked together. Planks may be laid directly on the soil, but all timber must be below standing water line. Other forms of raft foundations may be used if approved by the Board of Public Works.

### Foundations on Brick Work.

Section 61. Walls, columns and other loads may rest upon a foundation of brick work built in accordance with Section 27 of this Ordinance. The faces of such foundations shall have a batter of not less than sixty degrees from a horizontal plane, taken from the ledge of column base or wall.

### Foundations of Stone.

Section 62. Walls, columns and other loads may rest upon a foundation of cut stone or of rubble stone masonry. The faces of such foundations shall have a batter not less than sixty degrees from a horizontal plane taken from the ledge of column base or wall.

All stones used shall be of such size that no stone shall have a projection more than one-third its length. Stone to be laid in Portland cement mortar.

### **Foundations of Plain Concrete.**

Section 63. Walls, columns and other loads may rest upon a foundation of plain concrete, in which case the faces of such foundation shall have a batter not less than sixty degrees from a horizontal plane. Concrete to be in accordance with the provisions of Section 25 of this Ordinance.

### **Foundations of Reinforced Concrete.**

Section 64. Walls, columns and other loads may rest upon a foundation of reinforced concrete consisting of slabs, or beams and slabs constructed in accordance with the provisions of reinforced concrete in Class "B" buildings.

### **Foundations of Steel Grillage.**

Section 65. Walls, columns and other loads may rest upon a foundation of steel beams and girders. There shall be a layer of concrete at least six inches thick between any part of the steel and the earth.

### **Bases for Columns.**

Section 66. Columns shall rest upon cast iron or steel bases and all columns shall have some form of base plate or base, which may be leveled before placing the column. Granite levelers not less than 12 inches thick may be used.

### **Anchoring Columns.**

Section 67. Buildings where the height exceeds three times the least horizontal dimension shall have at least two anchors of  $1\frac{1}{2}$  square inches section each, fastened to column and passing into the concrete to within one foot of soil; anchor to have washer of size sufficient to develop strength of anchor. This does not apply to columns embedded in side retaining walls.

### **Shape of Foundations.**

Section 68. Foundations under columns shall be symmetrical except under wall columns, where the center line of the columns must lie within the middle

third of the foundation section. In this case the intensity of pressure on soil at the wall line must not exceed the allowed limit, due consideration being taken of any wall load in addition to the column load.

### Combined Foundations.

Section 69. In cases where the wall column load exceeds the above provision, the column must rest upon steel or reinforced concrete girder having an interior column or columns at the inner end. The foundation shall then be designed for the combined loads. This section does not apply to party walls and foundations.

Combined foundations or inverted arches of brick, stone or concrete masonry may be used in connecting piers or walls, in which case the arch shall be ample to support the load and the thrust taken by embedded tie-rods.

### Special Forms of Foundations.

Special forms of foundations, such as caissons, may be used after approval by the Board of Public Works.

### Retaining Walls.

Section 70. Walls sustaining the pressure of earth shall be designed in accordance with an approved formula. Reinforced concrete walls may be used, designed in accordance with the provisions for reinforced concrete in Class "B" buildings. No part of such walls shall extend beyond the curb line. Retaining walls for sidewalk areas provided with a sidewalk of steel beams and concrete shall not be less than seventeen inches wide at the top and increase one inch in thickness for every foot in height. Special forms of retaining walls with steel beams resting against the sidewalk beams may be used if of approved designs. No permanent wooden bulkhead over five feet in height shall be constructed.

### Area Walls for Hydrant Protection.

Section 71. At places where designated by the Board of Public Works the retaining walls of sidewalks shall be curved around any hydrant in such way that the hydrant is outside the wall and a clear space 3 feet 4

inches wide and 3 feet 4 inches deep from the curb line left for the hydrant. Sidewalks shall be built close up to hydrants.

### Sidewalk Construction.

Section 72. All sidewalks shall be made with a wearing surface of concrete, brick or stone laid in cement mortar or of asphaltum. Where resting directly on earth the concrete shall be at least three inches thick with a wearing surface of sand and cement in equal parts at least  $\frac{3}{4}$  of an inch thick in addition.

Sidewalks over excavated areas shall be supported on steel or reinforced concrete beams. The space between the beams shall be covered either with reinforced concrete slab at least 5 inches thick or a brick arch at least 4 inches thick. In addition there shall be a wearing surface of fine gravel and cement in equal parts at least  $\frac{3}{4}$  of an inch thick.

All sidewalks shall have a drop outward from the building line of  $1/5$  of an inch per foot of width.

All sidewalks shall be marked off into squares not over 3 feet to a side.

Sidewalk surfaces may be constructed of lens lights not exceeding four inches square set in cement and supported by cast or wrought iron frames or reinforced concrete beams.

## PART VI.

### CLASSIFICATION, DESCRIPTION, LIMITING DIMENSIONS AND RESTRICTIONS AS TO USE OF BUILDINGS.

Section 73. For the purpose of this Ordinance, buildings are divided into "Class A," "Class B," "Class C," "Mill Construction" and "Frame or Wooden Buildings."

#### Class "A" Buildings.

Section 74. Class "A" buildings are defined as those having fireproof frames of steel and with all structural parts of incombustible material. Walls shall be of brick, stone, concrete or reinforced concrete.

Class "A" buildings with all wall loads above the third floor carried on the steel frame shall not be limited as to height.

Class "A" buildings with self-supporting curtain or bearing walls on the exterior shall be limited in height to 86 feet.

Class "A" buildings may be built anywhere in the city.

### **Class "B" Buildings.**

Section 75. Class "B" buildings are defined as those having a frame of reinforced concrete carrying all wall and floor loads. All structural parts shall be of incombustible material. Walls shall be of brick, stone or reinforced concrete. The maximum limit of height of Class "B" buildings shall be ten (10) stories and they may be built anywhere in the city.

### **Class "C" Buildings.**

Section 76. Class "C" buildings are defined as those having exterior walls of brick, stone or concrete and an interior frame of combustible material. The walls may be bearing or curtain walls and the interior supports may be timber joists, timber or steel girders, and timber, steel or cast iron columns or timber studding.

Class "C" buildings built with the interior of mill construction or with all joists, girders, studding, furring and soffits of stairs lathed with metal lath and plastered may be built to a height not to exceed eighty-four (84) feet.

Class "C" buildings with all joists, girders, studding, furring and soffit of stairs lathed with wooden lath and plastered, or not lathed and plastered, may be built to a height not to exceed fifty-five (55) feet.

Class "C" buildings may be built anywhere in the city.

### **Mill Construction.**

Section 77. Buildings of mill construction are defined as those with exterior walls of masonry and the interior loads supported by heavy timber frame. The frame shall be constructed without concealed air spaces.

This method of construction may be used for the interior of Class "C" buildings and be built to a height of eighty-four (84) feet.

### Frame or Wooden Buildings.

Section 78. Frame or wooden buildings may be constructed to a height not exceeding forty (40) feet and may be built anywhere in the City and County except within the fire limits and shall contain not more than three (3) stories and basement within the said forty (40) feet.

On sloping ground: In the case of a frame or wooden building on a lot with the ground sloping downward from the facade at which the measurement is taken, the height of the building shall not at any point exceed forty (40) feet above the curb line measured on the facade facing the street, nor shall the height of the building at any point of the grade exceed fifty (50) feet above the adjoining curb in case of corner lots, or above the level of the ground in case of inside lots, provided, however, in the case of a frame or wooden building to be used only for the residence of a single family on a lot with the grade sloping downward from the facade at which the measurement is taken the height, except at the front facade, may exceed fifty (50) feet, but there shall not be at any point more than fifty (50) feet of frame construction above the foundation. Said foundation shall be of masonry, steel frame construction or reinforced concrete construction, and no part of the area within said foundation shall be in any way occupied. And provided further that in no event shall the total height of construction at any point on the lot built upon exceed seventy (70) feet above the footings.

In no case provided for in this section shall the building at any point extend to a greater height than that of a horizontal plane forty (40) feet above the curb line on the facade fronting the street.

Provided that where frame residences on an inside lot sloping downward from the facade at which the measurement is taken exceed in any part of the grade 50 feet 0 inches above the natural level of the lot, there shall be provided a passageway at least 3 feet 0 inches wide from the rear of the lot to the street. Said passageway, if within the exterior walls of the building, must have its interior lined throughout with sheet metal or be metal lathed and plastered.

And it is further provided that in the rear of any frame residence where the height at any point exceeds 50 feet 0 inches above adjoining curb line in the case of corner lots, or above the level of the ground in the case of inside lots, there shall be a metal fire escape leading from the roof to within 8 feet 0 inches of the ground, unless there are two or more separate stairways from the upper floor to the ground; and provided further in the case of frame dwellings on inside lots whose height above the ground level exceeds 50 feet 0 inches as herein provided, the rear line of such building, exclusive of fire escapes, shall at no point be closer to the rear line of the lot than a distance equal to 15 per cent of the average depth of the lot.

### Private Garage.

Section 78a. One-story buildings with enclosing walls and roof of corrugated iron or galvanized sheet metal, supported on a frame of steel construction, not exceeding fifteen (15) feet in height and in area four hundred (400) square feet, may be built and be used for private garage purposes only, and may be erected only in the rear of any residence or in the rear of any lot in the City and County outside the fire limits.

### General Height Limitation.

Section 79. The heights of buildings shall not exceed the heights given under the different classes except that stair and elevator houses, water tanks, towers and spires may exceed the limits.

Towers and spires on Class "C" or frame buildings may extend one hundred feet above the roof, but no such tower or spire shall occupy more than one-quarter of the street frontage of the building, nor shall it have a base area exceeding 1,000 square feet. Such towers and spires shall not be used as a dwelling, place of manufacture nor storage room and shall be covered with fireproof materials.

Towers for the purpose of filtering, cooling or purifying water may be erected or constructed; provided,

that they be erected or constructed independently of the building and to a height not exceeding seventy-five (75) feet, and that they be of heavy timber or steel construction.

### General Limitations of Area.

Section 80. No restriction is placed on the floor area of buildings Class "A" and Class "B" construction.

In buildings of Class "C," wherever built, provided such buildings are erected and constructed on corner lots or on inside lots running through from street to street, and not exceeding one story and basement in height, no single floor area between exterior division or party walls shall exceed nineteen thousand (19,000) square feet, except wherein said designated Class "C" mill and frame buildings are erected or constructed on a lot other than a corner lot, or lot extending through from street to street, the area shall not exceed 10,000 square feet; provided, however, should such building be erected on such lot as herein referred to, be completely equipped with a system of automatic sprinklers in a manner approved by the Board of Fire Underwriters of the Pacific, the said area may be increased to not exceed 15,000 square feet. No wall or part of wall in any such existing building or in any such building hereafter erected shall be removed to produce a larger area than that named above.

None of the herein designated buildings nor any part thereof shall be used as a place of storage, keeping or handling of any combustible article except under the conditions prescribed by the Ordinances of the City and County of San Francisco.

Sheds limited in area to 1500 square feet shall be permitted in the fire limits, provided they conform to the requirements of Section 156 of the "Building Law."

Attics, or unfurnished space between the ceiling and roof rafters of every Class "C," or frame building, shall be divided into compartments or rooms in order to prevent the rapid progress of fire. Such compartments shall not have a floor area of more than twenty-five hundred (2500) square feet.

### General Restrictions as to Use.

Section 81. Theatres in any part of the city shall be of Class A construction.

Schools, hospitals, sanitariums and halls and other places of public assemblage, seating more than 1,000 persons, other than theatres, built in any part of the city, shall be of Class A or Class B construction, with columns in outer walls supporting floor and roof loads.

Department stores, warehouses and buildings without partitions, built anywhere in the city and used for the storage of merchandise shall be of either Class A, Class B or Class C construction, and shall be limited to the heights prescribed for said types of construction; **provided, however**, that no building of this character shall be constructed to a greater height than 102 feet.

Wood working mills operated by power wherever erected shall be of Class A, Class B or Class C construction.

**Stables:** All buildings used for stabling animals above the first or ground floor or in basement shall be of Class A or Class B construction.

## PART VII.

### SPECIAL PROVISIONS RELATING TO THE CONSTRUCTION OF CLASS "A" BUILDINGS.

#### Description.

Section 82. Class A buildings of unlimited height shall be built with a steel frame carrying all floor loads and all walls from the third floor up.

Class A buildings in which the height does not exceed 86 feet may have the exterior wall a bearing wall carrying the adjacent floor loads, or the exterior wall may be a self-supporting curtain wall without openings, the floor loads being carried on columns built in the wall. Cast iron columns may be used in such buildings. **Provided**, that no school, hospital, theatre, or building for public assemblage required to be fireproof, be constructed without columns built into the exterior walls which columns may carry the floor load only.

### Steel Frame.

Section 83. No material less than  $\frac{1}{4}$ -inch thickness shall be used in any part subject to stress.

Section 84. Columns shall be proportioned in accordance with Sections 46, 47, 48, and 49 of this Ordinance. All columns in buildings over 86 feet in height shall be made up of rolled steel shapes and no columns shall be used which do not have one solid web of metal along or parallel with one axis of cross section. All columns shall extend to a foundation the top of which is not above the basement floor level, except where the load is carried on trusses or girders to other columns.

Columns shall be connected to each other by splice plates near a floor line. The splice plate must be of sufficient size to take any possible tension or shear due to wind or eccentric loading. Columns may be built in lengths of one or more stories.

Cast iron columns may be used in buildings under 86 feet in height and shall be in accordance with Sections 51, 52 and 53 of this Ordinance.

### Girders and Beams.

Section 85. Girders and beams shall be rolled steel shapes or built of rolled steel sections. The compression flanges shall be stayed against side deflection if the length exceeds 30 times the width.

Girders of two "I" beams or channels shall have bolted separators at ends, under concentrated loads and at intervals of not over five feet when uniformly loaded.

Built girders shall have stiffeners at the ends, under concentrated loads and under uniform loads at distances apart not exceeding the depth of the girder when the shearing stress per square inch exceeds that given by the formula

$$S \text{ equals } \frac{15,000}{1 + \frac{d^2}{3000 t^2}}$$

where  $d$  equals clear distance between flange angles and  $t$  equals web thickness in inches.

### **Limiting Distances.**

Section 86. No part of the metal of any column except connections and beam support shall be less than four inches from the outside of any exterior wall. Portions of the frame supporting walls shall not be less in width than one-half the width of the wall and the supporting part shall project to within two inches of the outer face of the wall.

### **Tie Rods.**

Section 87. Tie rods shall connect all beams where the floor construction gives rise to a thrust. Rods shall have nuts or turnbuckles for adjustment.

### **Metal Fronts, Cornices, Fire Walls, Roof Trusses.**

Section 88. Cast iron or metal fronts may be placed in front of columns of the steel frame, provided the latter and fully fireproofed.

Brackets supporting overhanging cornices, belt cornices and other projections shall be attached to the steel frame.

Parapet and fire walls shall, if over three feet high above roof, be connected to the steel frame which must be extended for that purpose.

Roof trusses under 45 feet span may rest on brick walls. Spans over 45 feet shall rest on steel columns.

### **Wind Bracing.**

Section 89. In buildings over one hundred and two feet high, or where the height exceeds three times the least horizontal dimension, the following provisions of this section shall apply:

The steel or concrete frame shall be designed to resist a wind force of 15 pounds per square foot acting in any direction upon the entire exposed surface.

The combined dead load, live load and wind load stress shall not exceed the permissible dead and live load stress by more than  $33\frac{1}{3}\%$ .

In no case shall the overturning moment due to wind exceed 50 per centum of the moment due to the weight of the structure. All exterior wall girders shall have knee-brace connections to columns. Provisions shall

be made for diagonal, portal or knee-bracing to resist wind stresses, and such bracing shall be continuous from top story to and including basement.

### Walls.

Section 90. The exterior party or division walls where carried on the steel frame shall be of brick, reinforced concrete, concrete blocks, stone or terra cotta. Where self-supporting walls are used they shall be of brick or plain concrete. All walls shall be anchored to frame at spaces not exceeding 5 feet with  $\frac{3}{4}$ -inch anchors with 6-inch square heads.

Outside of fire limits sheet metal may be used in buildings used for purposes of manufacture other than wood-working.

### Brick Walls.

Section 91. Brick walls when supported on the steel frame or in the first and second story, shall be at least 13 inches thick unless reinforced, except that if used in the basement they shall be 17 inches thick. Stone or terra cotta veneer shall not be counted part of this thickness. If the height of a supported wall exceeds 24 feet or the area between supporting girders and columns exceeds 400 square feet the thickness shall be made 17 inches.

Self-supporting curtain walls of brick built in between columns supporting floor loads may be used in Class A buildings of a height not over 86 feet. Said curtain walls shall be 21 inches thick in basement, 17 inches thick for a height of 46 feet above the first floor and 13 inches thick for the remaining height. No openings shall be made in curtain walls.

Self-supporting bearing walls of brick may be used in Class A buildings of a height not over 86 feet. Such walls shall be of a thickness as given in Section 133 of this Ordinance relating to Class C buildings. Such walls may be used to carry adjacent floor loads, provided that the adjacent interior column is not more than 20 feet from the bearing wall.

### Reinforced Concrete Walls.

Section 92. Walls of reinforced concrete shall be permitted in Class A buildings provided they be con-

structed in accordance with Section 116 of this Ordinance relating to Class B buildings, except that they shall be supported on steel columns and beams instead of reinforced concrete.

Concrete made with broken brick or terra cotta or cinders instead of broken stone will be permitted in Class A buildings.

### **Concrete Block Walls.**

Section 93. Concrete blocks shall be of dense concrete with courses not over 12 inches high, except in ornamental courses. Walls shall be at least 12 inches thick. Blocks shall be of concrete at least 2 inches thick at all parts, and shall be made interlocking and set in Portland cement mortar. The area of opening in blocks shall not exceed 1-3 of the total cross sectional area of the block. Walls shall be supported on the frame at each floor level.

### **Terra Cotta.**

Section 94. Terra cotta blocking may be used in outside walls and in courts. On outside walls it shall be set in cement mortar and tied to the steel frame by anchors of at least one-half inch diameter round iron.

Window mullions of terra cotta shall have a vertical steel member enclosed and connected to the steel frame.

Terra cotta blocks shall be set in courses not over 12 inches deep except in ornamental courses. Walls shall be at least twelve inches thick and supported on the steel frame at each floor level.

### **Reinforced Block or Brick Walls.**

Section 95. Walls of concrete blocks, tile or brick may be built of a thickness not less than eight inches, provided that in all walls over 200 square feet between supporting girders and columns vertical steel rods not less than one-half of an inch diameter and spaced not over 24 inches apart, horizontally, are used to reinforce the walls. Such rods must be rigidly attached to the steel frame at each floor. Interlocking hollow tile walls may be used and may be built of a thickness not less than eight inches. Vertical or horizontal reinforcement may be used. If vertical reinforcing is used the same

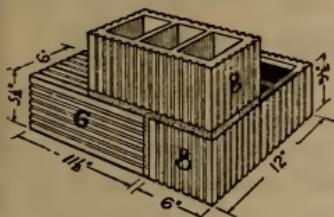
shall comply with requirements of similar reinforcing for brick walls; if horizontal reinforcement is used members shall be steel one-quarter inch by one and one-quarter inch spaced not more than twenty-eight inch centers. These members shall be rigidly attached to the building frame by an approved band to prevent lateral movement. Vertical reinforcement shall be provided around all openings in eight-inch brick, tile or concrete block walls. No eight-inch walls shall be built of a height exceeding 18 feet in each story. If the area of wall surface included between two adjacent wall columns and adjacent floor girders exceeds 400 square feet, the thickness of the wall shall be not less than twelve inches, and all joints shall be broken horizontally and vertically across the wall. When interlocking hollow tiles are used on the inner facing of a hard selected brick wall the tiles and brick shall be bonded together with solid brick headers at least every seventh course of brick, and such walls shall be estimated as laid up with kiln run brick.

#### **"Interlocking Hollow Tile."**

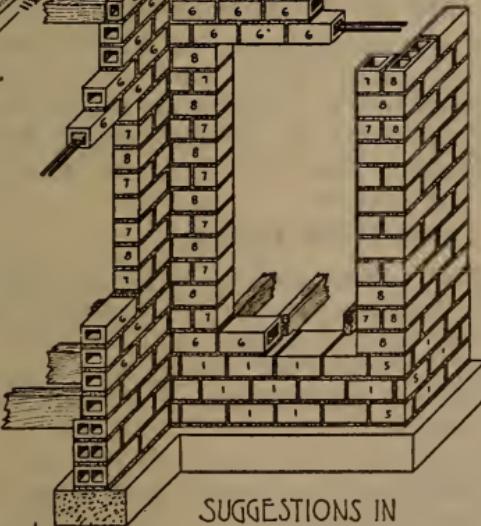
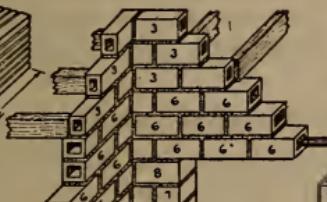
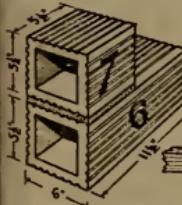
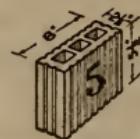
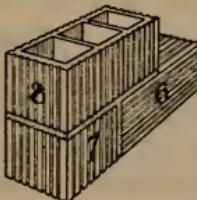
Section 95a. The term "interlocking hollow tile" is hereby defined to mean a tile made of shale, fire or other clay which, when burned shall be free from undue checking or warping and shall be fashioned so that when laid in the wall, each unit locks or bonds into the opposite tile or tiles, or into the tiles immediately below or above. Interlocking hollow tiles shall conform to the following requirements: They shall be burned to such density that in a forty-eight hour test they will not absorb moisture exceeding twelve per cent of their weight. They shall develop an ultimate crushing strength of not less than fifteen hundred pounds per square inch of their bearing members. The allowable stress shall not exceed one hundred fifty pounds per square inch of net area of bearing members. Bearing members herein mentioned, shall mean only such vertical webs or walls of said tiles as will rest on thorough mortar beds and stand in complete vertical alignment with vertical members of the adjacent interlocking hollow tile below.

# HOLLOW BUILDING TILE

6" CORNER



6" JAMB



The vertical webs and shells of all interlocking hollow tiles used for all bearing walls shall be in thickness at least twenty per cent of the cross section measurement of the void they enclose.

### **Light Court and Vent Shaft Walls and Openings.**

Section 96. The walls of all outer courts and shafts and lot line courts and shafts and of all courts and shafts the area of which exceeds 50 square feet shall be of the same construction as the outer walls of the building.

The walls of all other courts and shafts of an area less than 50 square feet may be of the same construction as allowed for partition but they must be plastered on outside.

### **Floor and Roof Construction.**

Section 97. The structural part of floors and roofs may be built of terra cotta, brick, steel, or of concrete made of stone, broken brick, cinders or other concrete. The slabs or arches shall be proportioned to carry loads 20 per cent greater than required for the supporting steel beams of the frame.

#### **Terra Cotta Floors.**

Section 98. Segment floor arches built of terra cotta shall have a rise of not more than 1-10 the span for the arch portion, not less than 4 inches for spans up to six feet, nor less than 6 inches for spans up to ten feet. Spans over ten feet are prohibited. No arch shall be less than 4 inches thick.

Arches shall be constructed so that the key block shall fall in the center and the shells and webs always abut against each other.

Flat arches shall have spans not exceeding ten feet and the depth of the tile shall not be less than one and three-quarter inches for each foot of span.

#### **Brick Arch Floors.**

Section 99. Brick laid in cement lime mortar may be used for floors up to ten feet span. The rise shall be 1-9 the span with 4 inches crown thickness for spans up to six feet and 8 inches crown thickness for spans up to ten feet.

### Reinforced Concrete Floors.

Section 100. Floors of reinforced concrete built in conformity with the requirements for reinforced concrete as outlined under Class B buildings may be built in Class A buildings.

No concrete slab shall have a span exceeding sixteen (16) feet and in buildings over 86 feet in height no slab shall be over ten (10) feet span.

No slab of stone concrete shall be less than three and one-half inches thick except roof slabs which may be 3 inches thick. Slabs over eight feet span and less than twelve feet span shall not be less than 4½ inches thick. Slabs over twelve feet span shall not be less than 5 inches thick. Slabs may be built of concrete in which broken brick, terra cotta or cinders are used in place of stone, provided they are made not less than 4 inches thick for floors and not less than 3½ inches thick for roofs.

### Special Floors.

Section 101. Floors may be built of lens light not exceeding four inches square each, set in cement and constructed in a manner similar to sidewalk construction.

Floors of iron plates resting on steel supports may be used in boiler rooms.

Floors of special design must be submitted to the Board of Public Works for approval.

### Floor Covering.

Section 102. The wearing surface of the floors shall rest on the structural part and may consist of a cement finish, terrazzo, marble, tile, encaustic or other tile, wood resting upon sleepers fastened to the structural part with concrete filling or other material approved by the Board of Public Works.

### Fireproofing.

Section 103. All parts of the steel frame including cast iron columns shall be covered with fireproofing. The fireproofing shall be continuous and no pipes of any description shall be laid in any fireproofing nor shall any fireproofing be cut to allow the passage of any pipe or duct through any part except floor slabs.

In roofs where space is left between the ceiling and roof beams, fireproofing may be omitted from the steel frame, except around columns, and where columns project above the roof they shall be fireproofed, but this shall not apply to the exposed beam supporting tanks, etc.

### Column Fireproofing.

Section 104. All columns shall be protected at all places with a layer of concrete, brick, terra cotta, or metal lath and plaster. If of concrete the fireproofing shall be of such thickness as to fill all outer spaces of the columns and to extend at least three inches outside of the extreme metal of the columns. Concrete may be made of broken stone, broken brick, broken terra cotta or cinders, no part of which shall be over one inch in major dimensions.

A mesh of metal lath or other form of metal reinforcement shall be placed in this concrete not less than one inch from the outer surface thereof.

If the fireproofing is made of terra cotta it may be of either dense, semi-porous or porous blocks not less than four inches thick. A space of one inch shall be left between the metal of column and the inside of the terra cotta, which space shall be filled with concrete grouted in.

Terra cotta shall be set in cement mortar and the blocks fastened with metal ties of approved pattern.

If the fireproofing be of brick it shall be at least  $2\frac{3}{4}$  inches thick outside of the column metal and set in cement mortar. The main reentrant portions of the columns shall also be filled with brick.

If the fireproofing be of metal lath and plaster it shall be of the double forms. Lath shall be strapped around the steel column and plastered with cement mortar or hard wall plaster. A second sheathing of lath shall be placed outside of the first, separated therefrom by an air space of at least one and one-half inches. The outer sheathing of lath shall be rigidly supported by the column and covered with cement mortar.

A partition will be considered as a substitute for the outer sheathing.

### Fireproofing of Beams and Girders.

Section 105. Fireproofing of the floor beams, girders and other parts of the steel frame shall be made in the same manner as specified for columns except that all steel shall be covered at least two inches in its extreme parts.

Soffits of beams and girders protected by concrete shall have a metal mesh embedded in the concrete and bent around the flanges of the beams as a support.

If such fireproofing be of terra cotta, the concrete filling required on columns may be omitted around beams and girders. Soffits of beams shall be protected by at least two inches of terra cotta, which shall be locked into the arches or around the flanges of the beams.

Section 106. Partitions may be built of brick, solid concrete, reinforced concrete, metal lath and plaster on metal studs, terra cotta, plaster blocks or other forms approved by the Board of Public Works.

No partition shall rest upon a wooden floor, but must be carried down to the incombustible material below.

Brick partitions shall be laid as walls and the thickness shall not be less than 8 inches.

Solid plain concrete partitions shall not be less in thickness than 1-30 of the height.

Reinforced concrete partitions shall not be less in thickness than 1-60 of the height.

Plastered partitions shall have a base of metal studs and metal lath. Up to a height of twelve feet solid partitions two inches thick with one layer of lath may be used. For greater heights studs with two layers of lath shall be used. The depth of the studs shall be at least 1-60 of the height of the partition.

No grounds for fastening wooden parts shall be inserted in the plaster which must be continuous from floor to ceiling.

Terra cotta partitions shall have the blocks set in cement line mortar and fastened with iron clips. Thickness of terra cotta shall be at least 1-40 of the height of partitions, provided, however, that where galvanized wire cloth,  $2\frac{1}{2}$  meshes to the inch of No. 20 wire or galvanized expanded metal lath of 26 gauge is used on

each course of terra cotta, the full length of partitions, the thickness shall be at least 1-60 of the height of partitions. When interlocking terra cotta tile is used, metal clips and wire mesh reinforcement may be omitted.

Plaster block partitions shall be built of solid plaster blocks of a thickness at least 1/40 of the height of partitions and dowelled at top and bottom of each block.

### **Ceilings.**

Section 107. Ceilings shall be made of reinforced concrete, terra cotta tile, metal lath and plaster or other approved forms. If of reinforced concrete or terra cotta tile, the provisions relating to floors shall apply. If the ceilings be of metal lath and plaster the lath shall be suspended from the floor or ceiling beams by a rigid frame work, to which the lath shall be firmly applied.

### **Plaster Board**

Section 107A (as adopted February 21, 1921). Whenever in this Ordinance, which is known as "The Building Law" of the City and County of San Francisco, metal lath is required, there may be used, in lieu thereof, plaster board composed of pure gypsum, wood and manila fiber, or of other similar materials, but not less than seventy-five per cent (75%) of such composition shall be of non-inflammable material. Excepting that in Class A and Class B buildings the use of plaster board is prohibited in all elevator shafts and in the walls and ceilings surrounding stair cases in such buildings.

Such plaster board shall be not less than three-eights inch ( $\frac{3}{8}$ ") in thickness and shall be so constructed as to form a mechanical key or bond between the plaster board and the finish plaster. Such mechanical key or bond shall be equally distributed and shall compose at least twenty per cent (20%) of the surface of the plaster board.

On wood joists, furring strips, studding or other wood supports, the plaster board shall be securely fastened by means of nails of such length that the said nails shall extend at least three-quarters inch ( $\frac{3}{4}$ ") into the joists, furring strips, studding or other sup-

# WALL BOARD HEADQUARTERS

# Plaster Board

# Plaster Wall Board

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Building Laws

*Wood Fibre Wall Board or Tile*

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Ceilings or the home. Just the  
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Also Manufacturers of a complete  
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QUALITY AND PRICE ATTRACTIVE

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ports. Such nails shall be spaced or driven not more than six inches (6") apart in one direction and sixteen inches (16") apart in the other direction. Where the furring strips, studs or other supports are of metal, the plaster board shall be securely fastened to same with galvanized iron wire of not less than No. 14 gauge or with metal clips or nails, spaced the same as in this section provided for nails. All wire nails used for fastening plaster board shall be at least No. 11 gauge with a flat head not less than three-eighths inch ( $\frac{3}{8}$ ") in diameter.

All such plaster board shall have applied thereon at least two (2) coats of hardwall plaster, or in lieu thereof, two (2) coats of lime mortar to which has been added Keene cement in the proportion of two hundred (200) pounds of Keene cement to one (1) cubic yard of lime mortar, to a minimum thickness of three-eighths ( $\frac{3}{8}$ ) inch. Sufficient time must elapse to allow the scratch coat to thoroughly dry and harden before brown coat is applied.

A plaster board not less than one-quarter ( $\frac{1}{4}$ ) inch in thickness and otherwise conforming to the provisions of this Ordinance may be used, providing, however, the board is of sufficient strength so as to be handled in lengths up to twelve (12) feet.

All such plaster boards shall have applied thereon at least two (2) coats of hardwall plaster, or in lieu thereof, two (2) coats of lime mortar to which has been added Keene cement in the proportion of two hundred (200) pounds of Keene cement to one (1) cubic yard of lime mortar, to a minimum thickness of one-half ( $\frac{1}{2}$ ) inch. Sufficient time must elapse to allow the scratch coat to thoroughly dry and harden before brown coat is applied.

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## PART VIII.

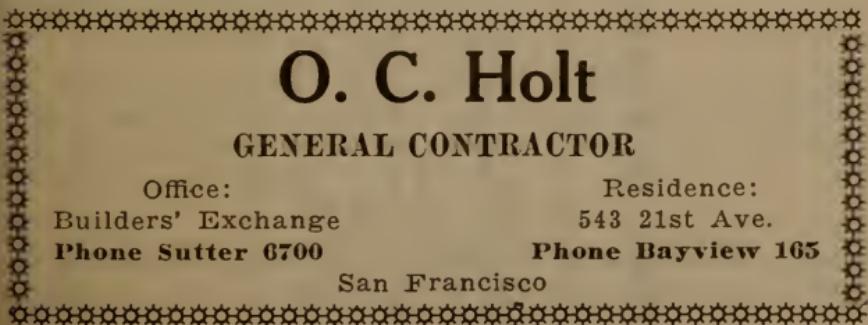
## SPECIAL PROVISIONS RELATING TO THE CONSTRUCTION OF CLASS "B" BUILDINGS.

Section 108. Class "B" buildings shall have a complete frame of columns, girders and beams made of reinforced concrete. The structural parts of the floors shall be of reinforced concrete and the walls may be of reinforced concrete, brick, terra cotta or concrete blocks. Steel roof trusses constructed in accordance with the requirements for Class "A" buildings shall be permitted in Class "B" buildings.

## Materials—Tests and Allowable Stresses.

Section 109. The concrete shall be mixed in the proportion of not less than one (1) part of Portland cement to seven and one-half ( $7\frac{1}{2}$ ) parts of aggregates, measured separately, consisting of sand and gravel or broken stone of not more than one and one-quarter-inches ( $1\frac{1}{4}$ ) major dimension for curtain walls, columns, slabs, girders and beams, and two and one-half inches ( $2\frac{1}{2}$ ) for heavy walls and foundations. In no case shall the total amount of bank sand in any mixture of concrete exceed twenty-five per cent (25%) of the total sand.

For the purposes of this Ordinance the stresses given in the following table shall be considered as the ulti-



# O. C. Holt

## GENERAL CONTRACTOR

Office:

Builders' Exchange  
Phone Sutter 6700

San Francisco

Residence:

543 21st Ave.

Phone Bayview 165

mate compressive strengths in pounds per square inch at an age of twenty-eight (28) days of the various proportions of concrete indicated.

TABLE OF ULTIMATE COMPRESSIVE STRENGTHS OF DIFFERENT  
MIXTURES OF CONCRETE

Aggregate	1 to 3	1 to 4½	1 to 6	1 to 7½
Granite, trap rock	3300	2800	2200	1800
Gravel, hard limestone and hard sandstone	3000	2500	2000	1600
Hard burned clay products, impervious to water, direct from kiln, free from mortar	2700	2200	1800	1400
Soft limestone and sandstone	2220	1800	1500	1200

The ratios indicate the proportion of cement to the combined volume of fine and coarse aggregate measured separately.

The following permissible stresses shall not be exceeded in concrete:

### Bearing.

When compression is applied to a surface of concrete of at least twice the loaded area a stress of 35% of the ultimate compressive strength will be allowed in the area actually under load. Under other conditions the bearing stress shall not exceed the stress permitted in these ordinances for longitudinally reinforced columns without hooping.

### Columns in Axial Compression.

For concentric compression on a plain concrete pier, the length of which does not exceed four (4) diameters and on a column reinforced with banded longitudinal bars only whose unsupported length does not exceed twelve (12) diameters, a stress of 22.5% of the ultimate compressive strength will be permitted. Where hooping is used in addition to the longitudinal reinforcement, a stress of thirty-five per cent (35%) of the ultimate compressive strength will be permitted provided the unsupported length of the column does not exceed ten (10) diameters.

### Transverse Bending Stresses.

An extreme fibre stress of 32.5% of the ultimate compressive strength will be permitted in members subjected to bending. Adjacent to support of continuous beams a stress of 37.5% of the ultimate compressive stress will be permitted.

### Combined Stresses.

Where columns are designed to take the moments of slabs, beams or girders framing thereto, a combined stress of 37.5% of the ultimate compressive strength will be permitted.

### Shearing Stresses.

In beams reinforced with stirrups looped about longitudinal bars or beams with the longitudinal bars bent

to take shear, a stress of  $4\frac{1}{2}\%$  of the ultimate compressive strength will be permitted. Where both stirrup and bent-up bars are used, a stress of 6% of the ultimate stress will be permitted.

For punching shear, a stress of 6% of the ultimate compressive strength will be permitted.

### Bond Stress.

The bond stress between concrete and plain reinforcing bars shall not exceed 4% of the ultimate compressive strength of the concrete and between concrete and deformed reinforcing bars it shall not exceed 5% of the ultimate compressive strength of the concrete.

### Modulus of Elasticity.

The modulus of elasticity of various concrete shall be assumed as follows:

For concrete of ultimate strength less than 2200 lb. sq. in.—2,000,000 lb. sq. in.

For concrete of ultimate strength between 2200 lb. sq. in. and 2900 lb. sq. in.—2,500,000 lb. sq. in.

For concrete of ultimate strength over 2900 lb. sq. in.—3,000,000 lb. sq. in.

### Tensile Stress.

The concrete shall not be designed to take tensile stresses.

Tension in reinforcing steel shall not exceed 16,000 lb. sq. in.

Tension in reinforcing steel in combined footing shall not exceed 18,000 lb. sq. in.

Tension in cold-drawn wire shall not exceed 20,000 lb. sq. in.

Steel shall bend, when cold, through an angle of 100 degrees around a radius equal to five times the thickness of the test piece, without fracture on the outer circumference. The fracture shall be silky or fine granular. All steel shall be free from dirt, paint and excessive scale and rust.

## DESIGN IN GENERAL

### SIMPLE BEAMS.

Section 110. All simple beams shall be designed to resist the bending resulting from the loads without exceeding the stresses given in Section 109.

### RESTRAINED BEAMS.

All continuous and restrained slabs, beams and girders shall be designed to resist, at all supports, the full moments and, between all supports,  $4/3$  of the moments resulting from all spans being fully loaded. In no case, however, shall the resisting moments between supports be less than the bending moments produced by any condition of partial loading.

Square floor slabs reinforced in two directions shall be designed for one-half the total dead and live loads in each direction.

The moment of resistance of any reinforced concrete construction under transverse loads shall be determined by formulas based on the following conditions:

(a) The bond between the concrete and steel is sufficient to make the two materials act together as a homogeneous solid.

(b) The strain in any fibre is directly proportionate to the distance of that fibre from the neutral axis.

(c) The modulus of elasticity of the concrete remains constant within the limits of the working stresses fixed in this Ordinance.

The dimensions of such a beam or girder and its reinforcement shall be determined and fixed in such a way that the strength of the metal in tension shall measure the strength of the beam or girder. If the concrete in compression, including the allowable concrete in adjoining floor construction does not afford sufficient strength for that purpose, the compression side of the beam or girder in question shall also be reinforced with metal.

All beams or girders shall be reinforced with metal, if necessary, for other reactions.

Neither the reinforcing metal nor the concrete shall be subjected to combined stresses in the same place so as to exceed in combination the stresses allowable separately.

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"Pittsburgh Perfect" Welded Wire Fabric

Size Mesh	Gauge	Sect. Area Longitudinal Wires	Wgt. per 100 sq. ft.	Width Rolls
4"x 8"	12-12	.026	13 lbs.	56 in.
4"x12"	10-12	.043	18 "	do.
4"x12"	8-10	.062	26 "	do.
4"x16"	4-10	.120	45 "	do.
4"x16"	6-10	.087	34 "	do.
6"x 6"	10-10	.029	20 "	54 in.
6"x 6"	6-6	.060	40 "	do.

Length of all Rolls 200 Lin. Feet.  
Transvere Wires have 1-inch Overhang.  
Other sizes upon inquiry.

## BAR SIZES AND WEIGHTS

SIZE Inches	AREA Square Inches		WEIGHT PER FOOT Pounds		
	Rounds	Squares	Rounds	Square Twisted	Corrug.
1/4	0.05	0.06	0.17	0.21	0.22
5-16	0.08	0.10	0.26	0.33	0.34
3/8	0.11	0.14	0.38	0.48	0.49
1/2	0.20	0.25	0.67	0.85	0.86
5/8	0.31	0.39	1.04	1.33	1.35
3/4	0.44	0.56	1.50	1.92	1.94
7/8	0.60	0.77	2.04	2.60	2.64
1	0.79	1.00	2.67	3.40	3.43
1 1/8	0.99	1.27	3.38	4.31	4.34
1 1/4	1.23	1.56	4.17	5.32	5.35

## REINFORCEMENT.

Section 111. If it is necessary to splice reinforcing members, either in tension or compression, sufficient lap shall be provided so as not to exceed the bond stresses provided in Section 109.

Steel shall be imbedded in concrete so that the thickness of concrete covering outside of steel shall be as follows:

For flat slabs, not less than three-fourths ( $\frac{3}{4}$ ) of an inch.

For columns and beams, not less than one and one-half ( $1\frac{1}{2}$ ) inches.

For foundations, not less than three (3) inches from earth at sides and top, and four (4) inches from earth at bottom of footing.

Where the shape of the reinforcement is such that it does not give sufficient bond to the concrete insulation, such reinforcement shall be wrapped with wire or otherwise prepared as required in Section 104 for fire-proofing of structural steel.

Any concrete structure or floor filling in same, reinforced or otherwise, which may be erected on a permanent centering of sheet metal, or metal lath and curved bars, or a metal centering of any form, must be strong enough to carry its loads without assistance from the centering, unless the concrete is so applied as to protect the centering as herein specified for reinforcing steel.

Exposed metal centering or exposed metal of any kind will not be considered as a factor in the strength of any part of any concrete structure and a plaster finish applied over the metal shall not be deemed sufficient protection.

## Floor and Roof Slabs.

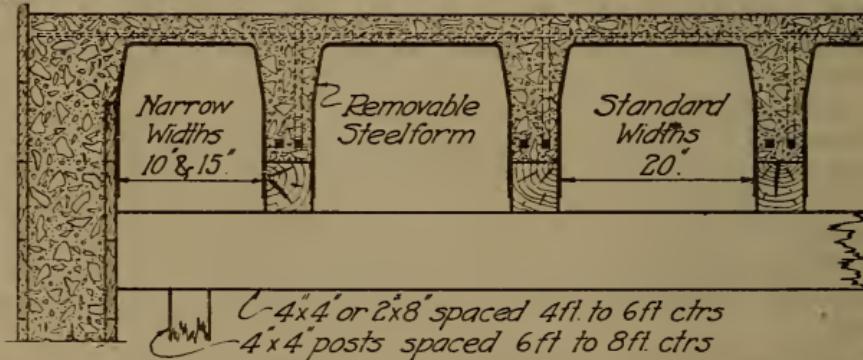
Section 112. The general provisions as to design shall hold for floor and roof slabs, which shall be of reinforced concrete. No floor slab shall be less than  $3\frac{1}{2}$  inches thick. No roof slabs shall be less than 3 inches thick.

The covering may be wood, marble, cement, tile or other material, but such covering shall not be considered as part of the thickness required for slabs.

# Steelforms

*For*

## Concrete Joist Construction



### Framing Detail for Steelform Joist Construction

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Steel forms are Adjustable for 8", 10", 12", 14" depths of concrete joist below floor slab

Literature on Application

# Steelform Contracting Co.

MONADNOCK BUILDING

San Francisco

The floor slab to the extent of not more than five times its depth on each side of a beam or girder may be taken as a part of said beam or girder in computing the moment of resistance of the beam or girder, but the beam and slab must be built at the same time as a unit.

Where beams, girders and slabs connect in such a way that there is a corresponding member on the opposite side of each support they shall be designed as continuous. Wherever possible, beams and girders and also their immediate floor construction shall be made continuous. Reinforcing metal shall be used for that purpose in the top of all connecting members at the point of support, and it shall be sufficient both in section and length to prevent fracture at the point of support when the connecting members are carrying twice their calculated loads.

Continuity or separate reinforcing material may be used in the top of the slab. In either case, however, if a part of the slab is considered as a part of the beam or girder, the reinforcing material must cross the full width both of the beam or girder and the part of the slab so considered.

#### Design of Columns.

Section 113. Columns of reinforced concrete shall not have an unsupported length exceeding fifteen times the least horizontal dimensions, which shall not be less than 10 inches.

In computing the strength of columns the  $1\frac{1}{2}$  inches of concrete nearest the surface shall be deducted from the area of concrete.

All columns shall have vertical steel reinforcing members, the net area of cross section of which shall be at least one per cent and not more than five per cent of the area of concrete in cross section where rods are used. These members shall be stayed against buckling at points whose distance apart does not exceed the least diameter of the column nor 16 diameters of the rod.

The stays shall have an area of at least five-one-hundredths of a square inch. Where structural shapes are used for reinforcing, they shall be designed as provided for similar members in Class "A" buildings, and

any concrete calculated to take compressive stress shall be enclosed in said reinforcement or otherwise reinforced as herein provided.

Vertical reinforcing members which are considered in compression shall have joints only at floors or other point of lateral support.

Columns which are hooped with steel near the outer surface in the shape of circular hoops or of helical cylinder, and if the minimum distance apart of the hoops, or the pitch of helix does not exceed one-tenth of the diameter of the hooped or helical cylinder, may have the strength assumed as the sum of the following elements.

1. The area of the concrete inside the hoops at 35% of the ultimate strength in direct compression in pounds per square inch.

2. The compressive resistance of the longitudinal steel shall be assumed to be that given by a stress in the steel equal to the stress in the surrounding concrete multiplied by the ratio of the modulus of elasticity of the steel to that of the concrete.

3. The hooping is to be designed of a strength to resist the tension due to a unit lateral pressure of one-fifteenth the unit compression stress on the concrete. Splices in hooping, if required, and anchoring of same shall develop full strength of hooping.

#### Flat Slabs.

Section 113A. 1. **DEFINITION**—Flat slab as understood by this ruling are reinforced concrete slabs, supported directly on reinforced columns with or without plates or capitals at the top, the whole construction being hingeless and monolithic without any visible beams or girders. The construction may be such as to admit the use of hollow panels in the ceiling or smooth ceiling with depressed panels in the floor.

2. The column capital shall be defined as the gradual flaring out of the top of the column without any marked offset.

3. The drop panels shall be defined as a square or a rectangular depression around the column capital extending below the slab adjacent to it.

4. The panel length shall be defined as the distance

c. to c. of columns of the side of a square panel, or the average distance c. to c. of columns of the long and short sides of a rectangular panel.

5. COLUMNS—The least dimension of any concrete column shall be not less than one-twelfth the panel length, nor one-twelfth the clear height of the column, except that columns supporting symmetrical roof loads only may be one-sixteenth (1/16) the panel length.

6. SLAB THICKNESS—The minimum total thickness of the slab in inches shall be determined by the formula:

$t = W^{1/2}/44$  (equals square root of  $W$  divided by 44), where  $t$  equals total thickness of slab in inches,  $W$  equals total live load and dead load in pounds on the panel, measured c. to c. of columns. Where the stress in the steel is 20,000 lb. per sq. in., the thickness of the slab shall be  $t = W^{1/2}/41$ .

7. In no case shall the thickness be less than 1/32 of the panel length ( $L/32$ ) for floors, nor 1/40 of the panel length ( $L/40$ ) for roofs ( $L$  being the distance c. to c. of columns).

8. In no case shall the thickness of slab be less than 6 in. for floors or roofs.

9. COLUMN CAPITAL—When used the diameter of the column capital shall be measured where its vertical thickness is at least 1½ in. and shall be at least 0.225 of the panel length.

The slope of the column capital shall nowhere make an angle with the vertical of more than 45 deg. Special attention shall be given to the design of the column capital in considering eccentric loads, and the effect of the wind upon the structure.

10. DROP PANEL—When used, the drop panel shall be square or circular for square panels, and rectangular or elliptical for oblong panels.

11. The length of the drop shall not be less than one-third of the panel length ( $L/3$ ) if square, and not less than one-third of the long or short side of the panel respectively, if rectangular.

12. The depth of the drop panel shall be determined by computing it as a beam, using the negative moment over the column capital specified elsewhere in this rule.

13. In no case, however, shall dimensions of the drop panel be less than required for punching shear along its perimeter, using the allowable unit shearing stresses specified below.

14. SHEARING STRESSES—The allowable unit punching shear on the perimeter of the column capital shall be  $3/50$  of the ultimate compressive strength of the concrete as given in Section 109 of the Building Law. The allowable unit shear on the perimeter of the drop panel shall be 0.03 of the ultimate compressive strength of the concrete. In computing the shearing strength for the purpose of determining resistance to diagonal tension the method specified by the Ordinance shall be used.

15. PANEL STRIPS—For the purpose of establishing the bending moments and resisting moments of square panels, the panel shall be divided into strips known as strip A and strip B. Strip A shall include the reinforcement and slab in a width extending from the center line of the column for a distance each side of this center line equal to one-quarter of the panel length. Strip B shall include the reinforcement and slab in the half width remaining in the center of the panel. At right angles to these strips, the panels shall be divided into similar strips A and B having the same width and relation to the center line of the columns as the above strips. These strips shall be for designing purposes only, and are not intended as the boundary lines of any bands of steel used.

16. These strips shall apply to the system of reinforcement in which the reinforcing bars are placed parallel and at right angles to the center line of columns, hereinafter known as the two-way system, and also to the system of reinforcement in which the reinforcing bars are placed parallel, and at right angles to and diagonal to the center line of columns hereinafter known as the four-way system.

17. Any other system of reinforcement in which the reinforcing bars are placed in circular, concentric rings and radial bars, or systems with steel rods arranged in any manner whatsoever, shall comply with the requirements of either the two-way or four-way herein specified.

18. BENDING MOMENT CO-EFFICIENTS, INTERIOR PANELS, TWO WAY SYSTEM—In panels where standard drops and column capitals are as above specified, the negative bending moment, taken at a cross section of each strip A at the edge of the column capital, or over it, shall be taken as  $WL/30$ .

19. The positive bending moment taken at a cross section of each strip A midway between column centers shall be taken as  $WL/60$ .

20. The positive bending moment taken at a cross section of each strip B in the middle of the panel shall be taken as  $WL/120$ .

21. The negative bending moment taken at a cross section of each strip B on the center line of the column shall be taken as  $WL/120$ .

22. In the formulas hereabove given W equals total live and dead load on the whole panel in pounds. L equals panel length, c. to c. of columns.

23. BENDING MOMENT CO-EFFICIENTS, INTERIOR PANEL, FOUR-WAY SYSTEM—In panels where standard drops and column capitals are used as above specified, the negative bending moment, taken at a cross section of each strip A at the edge of the column capital, or over it, shall be taken as  $WL/30$ .

24. The positive bending moment taken at a cross section of each strip A, midway between column centers, shall be taken as  $WL/80$ .

25. The positive bending moment taken at cross section of each strip B, taken in the middle of the panel, shall be taken as  $WL/120$ .

26. The negative bending moment taken at a cross section of each strip B, on the center line of the column, shall be taken as  $WL/120$ .

27. BENDING MOMENT CO-EFFICIENTS, WALL PANELS—Where wall panels with standard drops and capitals are carried by columns and girders built in walls, as in skeleton construction, the same co-efficients shall be used as for an interior panel, except as follows: The positive bend moments of strips A and B and midway between wall and first line of columns shall be increased 25%; provided, however, that the wall panels may be designed for the same moments as the interior panels, if the wall column is designed to

take the full bending moment produced on the column, assuming the slab to be fixed at the wall support.

28. Where wall panels are carried on new brick walls, these shall be laid in Portland cement mortar and shall be stiffened with pilasters as follows: If a 16-in. is used it shall have a 4-in. pilaster. If a 12-in. wall is used, it shall have an 8-in. pilaster. The width of pilaster shall be not less than the diameter of the column, nor less than one-eighth of the distance between pilasters. The pilasters shall be located, opposite the columns as nearly as practicable, and shall be corbeled out 4 in. at the top, starting at the level of the base of the column capital. Not less than 8-in. bearing shall be provided for the slab, the full length of wall.

The co-efficients of bending moments required for these panels shall be the same as those for the interior panels except as provided herewith: The positive bending moments on strips A and B midway between the wall and first line or columns shall be increased 50%.

29. Where wall panels are supported on old brick walls, there shall be columns with standard drops and capitals built against the wall, which shall be tied to the same in an approved manner, and at least an 8 in. bearing provided for the slab, the full length. Where this is impracticable, there shall be built a beam on the under side of the slab adjacent to the wall between columns, strong enough to carry 25% of the panel load.

The co-efficients of bending moments for the two cases of slab support herein described shall be the same as those specified in Section 27 and Section 28 for skeleton and wall bearing condition, respectively.

30. Nothing specified above shall be construed as applying to a case of slabs merely resting on walls or ledges, without any condition of restraint. These shall be figured as in ordinary beam and girder construction specified in the Ordinances.

31. BENDING MOMENT CO-EFFICIENTS, WALL AND INTERIOR—Wall columns in skeleton construction shall be designed to resist a bending moment of  $WL/60$  at floors and  $WL/30$  at roof. The amount of steel required for this moment shall be independent of that required to carry the direct load. It shall be placed as near the surfaces of the column as prac-

ticable, on the tension sides, and the rods shall be continuous in crossing from one side to another. The length of the rod below the base of the capital and above the floor line shall be sufficient to develop their strength through bond, but not less than 40 diameter, nor less than one-third the clear height between the floor line and the base of the following capital.

32. The interior columns must be analyzed for the worst condition of unbalanced loading. It is the intention of this ordinance to cover ordinary cases of eccentric loads on the columns by the requirement of Section 5. Where the minimum size of column therein specified is found insufficient, however, the effect of the resulting bending moment shall be properly divided between the adjoining slab and the columns above and below, according to the best principles of engineering and the columns enlarged sufficiently to carry the load safely.

33. BENDING MOMENT CO-EFFICIENTS, PANELS WITHOUT DROPS, OR CAPITALS, OR BOTH—In square panels where no column capital or no depressions are used, the sum total of positive and negative bending moments shall be equal to that computed by the following formula:

B. M. equals  $(WL/8) (1.53 \text{ less } 4k \text{ plus } 4.18k^3)$ .

Where B. M. equals numerical sum of positive and negative bending moments, regardless of algebraic signs.

W equals total live and dead load of the whole panel;

L equals length of side of a square panel, c. to c. at columns.

k equals ratio of the radius of the column or column capital to panel length, L.

This total bending moment shall be divided between the positive and the negative moments in the same proportion as in the typical square panels for two-way or four-way systems, as specified above for interior and wall panels, respectively.

34. POINT OF INFLECTION—For the purpose of making the calculations of the bending moment at the sections away from the column capital, the point of inflection shall be considered as being one-quarter

the distance c. to c. of columns, both cross wise and diagonally, from the center of the column.

35. TENSILE STRESS IN STEEL AND COMPRESSIVE STRESS IN CONCRETE—Tensile stress in steel and the compressive stress in the concrete to resist the bending moment shall be calculated on the basis of the reinforcement and slab in the width included in a given strip, and according to the assumptions and requirements given in Section 110 of the Building Ordinance. Steel shall be considered as being concentrated at the center of gravity of all the bands of steel in a given strip.

36. For the four-way system of reinforcement the amount of steel to resist the negative bending moment over the support of each strip A shall be taken as the sum of the areas of steel in one cross band and one diagonal band. The amount of steel to resist the positive bending moment of each strip B shall be considered as the area of the steel in a diagonal band. The amount of steel to resist the positive bending moment in each strip A shall be considered as the area of the steel in a cross band, and the amount of steel to resist the negative moment in each strip B shall be the steel included in the width of strip B.

37. For the two-way system of reinforcement the amount of steel to resist the bending moment in any strip shall be considered as the area of steel included in the width of the strip.

38. In both systems of reinforcement the compressive stress in the concrete in any strip shall be calculated by taking the area of steel considered for each strip and applying in a beam formula based on the principles of Section 110 of the Building Ordinance.

39. Where drop panels are used, the width of beam assumed to resist the compressive stresses over the column capital shall be the width of the drop.

40. The width of beam, where no drop panels are used, shall be the width of steel bands. Where this is found insufficient, the area shall be increased by introducing compression steel in the bottom of slab.

41. RECTANGULAR PANELS—When the length of panel in either two-way or four-way system does not exceed the breadth by more than 5 per cent. all com-

putations shall be based on a square panel whose side equals the mean of the length and breadth, and the steel equally distributed among the strips according to the co-efficients above specified.

42. In no rectangular panel shall the length exceed the breadth by more than one-third of the latter.

43. RECTANGULAR PANELS, FOUR-WAY SYSTEM—In the four-way system of reinforcement, where length exceeds breadth by more than 5 per cent, the amount of steel required in strip A, long direction, both positive and negative, shall be the same as that required for the same strip in a square panel whose length is equal to the long side of the rectangular panel.

44. The amount of steel, strip A, short direction, positive, shall be the same as that required for the same strip in a square panel, whose length is equal to the short side of the rectangular panel.

45. The amount of steel in strip B, positive and negative, shall be the same as that required for similar strips in a square panel whose length is equal to the mean of the long and the short side of the rectangular panel.

46. In no case shall the amount of steel in the short side be less than two-thirds of that required for the long side.

47. RECTANGULAR PANELS, TWO-WAY SYSTEM—In the two-way system of reinforcement the amount of steel required for the positive and the negative moment of each strip A shall be determined in the same manner as indicated for the four-way system above.

48. The amount of steel in strip B, positive and negative, running in short direction, shall be equal to that required for the same strip in a square panel whose length equals the long side of the rectangular panel.

49. The amount of steel in strip B, long direction, positive and negative, shall be equal to that required for the same strip in a square panel, whose length equals the short side of the rectangular panel.

50. In no case shall the amount of steel in strip B, long direction, be less than two-thirds of that in the short direction.

51. WALLS AND OPENINGS—Girders and beams

shall be constructed under walls, around openings and to carry concentrated loads.

52. SPANDREL BEAMS—The spandrel beams or girders shall, in addition to their own weight and the weight of the spandrel wall be assumed to carry 20 per cent of the wall panel load uniformly distributed upon them.

53. PLACING OF STEEL—In order that the slab bars shall be maintained in a position shown in the design during the work of pouring the slab, spacers and supports shall be provided satisfactory to the Board of Public Works. All bars shall be secured in place at intersections by wire or other metal fasteners. In no case shall the spacing of the bars exceed 9 in. The steel to resist the negative moment in each strip B shall extend one-quarter of the panel length beyond the center line of the columns in both directions.

54. Splices in bars may be made wherever convenient, but preferably at points of minimum stress. The length of splice beyond the center point, in each direction, shall not be less than 40 diameter of the bar, nor less than 2 feet. The splicing of adjacent bars shall be avoided as far as possible.

55. Slab bars which are lapped over the column, the sectional area of both being included in the calculations for negative moment shall extend not less than .25 of the panel length for cross bands and .35 of the panel length for diagonal bands, beyond the column center.

56. COMPUTATIONS—Complete computations of interior and wall panels and such other portions of the building as may be required by the Board of Public Works shall be left in the office of the Board of Public Works, when plans are presented for approval.

57. TEST OF WORKMANSHIP—The Board of Public Works may choose any two adjacent panels in the building for the purpose of ascertaining the character of workmanship. The test shall not be made sooner than the time required for the cement to set thoroughly, nor less than six weeks after the concrete had been poured.

58. All deflections under test load shall be taken at the center of the slab, and shall be measured from the

normal unloaded position of the slab. The two panels selected shall be uniformly loaded over their entire area, with a load equal to the dead load, plus twice the live load, thus obtaining twice the total designed load. The load shall remain in place not less than 24 hours. If the total deflection in the center of the panels under the test load does not exceed  $1/800$  of the panel length, the slab may be placarded to carry the full design live load. If it exceeds this amount of deflection, and recovers not less than 80 per cent of the total deflection within seven days after the load is removed, the slab may be placarded to carry the full design live load. If the deflection exceeds the allowable amount above specified, and the recovery is less than 80 per cent in seven days after the removal of the test load, other tests shall be made on the same or other panels. The results of which will determine the amount of live load the slabs will be permitted to carry.

59. GENERAL—The design and the execution of the work shall conform to the general provisions and the spirit of the Building Law of the City and County of San Francisco in points not covered by this ruling and to the best engineering practice in general.

Section 11. Adding a new section to Ordinance No. 1008 (New Series) and to be known as Section No. 113B, as follows:

#### Concrete Joist Construction.

Section 113B. All concrete floors built of the joist type of construction shall have a minimum top slab of  $2\frac{1}{2}$ " except in garages, machine shops and all buildings where the live load is over 125 pounds per square foot, and in buildings subjected to unusual concentrated loads, in which case the minimum thickness shall be 3 inches. The minimum thickness for roof slabs built of the joist type of construction shall be 2 inches.

The minimum reinforcement in slabs of the joist type of construction shall be .06 square inches of steel per foot of width transverse to the joists and .015 longitudinal, except in slabs 3 inches or more in thickness the transverse reinforcing shall be .08 square inches per foot of width and .04 square inches per foot of width longitudinally.

The minimum thickness of concrete joists shall not

be less than two (2) times the sum of the diameters of the main reinforcing bars plus 1 inch, and in no case shall the thickness of the joist be less than 4 inches.

Wherever the clear spans of concrete joists exceed 20 feet, there shall be a 3-inch concrete bridging rib connecting all joists in the center of the span, and where a 3-inch top slab is required or the floor is subjected to unusual concentrated loads 3-inch concrete bridging shall be provided so that the unsupported length of joists will not be more than 15 feet.

All bars in bottom of joists must have  $\frac{3}{4}$  of an inch of clear concrete fire-proofing.

The combined shear on steel and concrete in concrete joists containing bent up bars and no stirrups shall not exceed 60 pounds per square inch of concrete.

Forms for concrete joist may be removed three (3) days after pouring, provided the joist is supported for not less than two weeks after pouring of concrete.

### Wind Bracing.

Section 114. The provisions of Section 89 of this Ordinance relating to Class "A" buildings shall apply to Class "B" buildings, and in addition the reinforcing of columns shall be connected so as to develop its full strength in tension.

### Walls.

Section 115. Walls of Class "B" buildings may be built as provided in Sections 90 to 96 inclusive of this Ordinance relating to Class "A" buildings, and provided that self-supporting curtain or exterior walls of brick may not be used for buildings exceeding four (4) stories in height.

### Reinforced Concrete Walls.

Section 116. Reinforced concrete walls shall be at least six inches thick. If the area of wall surface included between any two adjacent wall columns and adjacent floor girders exceeds 350 square feet and is less than 500 square feet, the thickness of the wall shall not be less than eight inches, where the area is over 500 but less than 600 square feet the thickness shall be ten inches. If the area exceeds 600 square feet, the

wall thickness shall not be less than twelve inches, supported on the frame at each story.

Six-inch reinforced concrete curtain walls shall be reinforced with steel equivalent to  $\frac{3}{8}$ " sq. bars 12" c-c placed horizontally and  $\frac{3}{8}$ " sq. bars at 18" center to center placed vertically. For eight, ten and twelve-inch walls the steel as required above for 6" walls shall be increased 12 $\frac{1}{2}$  per cent, 25 per cent and 37 $\frac{1}{2}$  per cent, respectively.

No reinforcement shall be spaced more than 24 inches apart. Additional reinforcement shall be placed around openings, and all reinforcement shall be wired at each intersection. All reinforcements shall be rigidly connected at columns and girders to the steel reinforcement of the same.

Section 13. Concrete walls may be built in the form of bearing walls of uniform sections, and of same thickness required for brick walls.

If walls are built of piers and connecting walls, the piers shall be calculated and constructed as columns. The connecting wall, if built of reinforced concrete without windows, may be considered as self-supporting, in which case the thickness shall be six inches in the upper 40 feet, followed by an increase of three inches in thickness for every additional 40 feet in height.

When such walls are pierced by openings for doors and windows, the entire loads shall be concentrated on the piers which shall be proportioned as columns.

### **Partitions and Ceilings.**

Section 117. Partitions and ceilings shall be constructed in accordance with the provisions of Sections 106 and 107 of this Ordinance relating to Class "A" buildings.

### **Construction.**

Section 118. The following conditions shall be observed in reinforced concrete construction:

The concrete shall be mixed as wet as possible and deposited without causing a separation of the cement from the mixture. It shall be placed in the forms as soon as practicable after mixing and in no case shall concrete be used which has been wet more than one hour.

Joints in concrete poured at different times shall be made at such places as will not lessen the strength of the construction. Joints with old concrete shall be made by cleaning and roughening the old concrete and covering same with cement grout.

Forms shall be of sufficient strength to preserve their shape, and tight enough to prevent leaking of concrete. All rubbish and dirt shall be carefully removed from forms.

The forms for the beams and girders of a floor shall be constructed in conjunction with the forms for the floor slabs which they support, and no forms shall be removed until all parts of the respective floors are strong enough to support themselves and the loads that may come upon them during construction.

#### Tests.

Section 119. Test to determine the crushing strength of concrete shall be made by a competent engineer under the direction of the Board of Public Works. Tests of any members of reinforced concrete structure shall be made by the owner, when required by the Board of Public Works, and said tests shall show that the members tested will safely carry twice their designated load, and without deflecting more than 1/700 of the span.

#### Service Pipes and Cutting of Concrete or Reinforcement.

Section 120. Conduits or pipes for conveying electricity, air or gas may be embedded in the concrete except in columns, provided they are of such size and so placed as not to weaken the structure or its fire-proofing in any way.

Pipes conveying liquid in any form are not to be embedded in any part of the structural concrete except as may be necessary to pass through floors and walls.

No drilling into or cutting of the fireproofing or of the steel reinforcing spirals, hoops, stirrups or rods in any columns or beams for the purpose of attaching fixtures, hangers or for any purpose which will in any way injure the concrete or reinforcing in same, is to be permitted.

## PART IX.

## SPECIAL PROVISIONS RELATING TO CLASS "C" BUILDINGS.

Section 121. Class "C" buildings shall be built with brick, stone or concrete walls supporting the adjacent floor loads and with the interior floor loads supported by studded partitions, or by wooden or steel or cast iron columns and wooden or steel girders. Floor joists may be of wood.

The limit of height shall be eighty-four (84) feet, if metal lath be used on all floor and ceiling joists, girders, studding, wood furring and soffits of stairs. The limit of height shall be fifty-five (55) feet if wooden lath be used, or if not lathed; provided, that if in loft buildings seventy (70) feet or less in height, a complete automatic sprinkler system is installed in accordance with the requirements of the Board of Fire Underwriters of the Pacific, then the requirements as to lathing and plastering will be the same as Class "C" buildings fifty-five (55) feet in height.

Class "C" buildings may be built to the maximum height without lathing if the interior is of mill construction. Class "C" buildings may be built anywhere in the City.

**Inside Framing.**

Section 122. Inside loads shall be supported upon a framing of steel columns and girders and wood joists, or upon cast iron columns, steel girders and wood joists or upon steel or cast iron columns, wooden girders and wooden joists, or upon wooden columns, girders and joists, or studded partitions with wooden joists.

**Metal Frame.**

Section 123. If a metal frame consisting of steel or cast iron columns and steel girders be used it shall be framed as provided in Sections 83 to 88, inclusive, of this Ordinance relating to the construction of Class "A" buildings. All steel or cast iron columns shall be

connected to each other and to the walls at each floor by steel girders or beams not less than six inches deep, or by a timber joist rigidly attached to the column by a metal bracket and bolts.

### **Timber Columns.**

Section 124. If a timber frame consisting of timber columns, timber girders and joists be used, the columns shall be squared at right angles to their axis.

To prevent the unit stresses from exceeding those provided in Section 44 of this Ordinance, timber or iron cap and base-plates shall be provided in buildings over two stories high.

The foundations of timber columns shall be of concrete or brick, but a distributory grillage of planks or beams may be used in buildings not over two stories in height, as provided in Section 60 of this Ordinance.

### **Stud Partitions.**

Section 125. Stud shall be calculated as timber columns to sustain the load. Carrying stud partitions in basement shall have a continuous foundation wall of brick, stone or concrete under same.

### **Trusses.**

Section 126. Roof trusses may be of steel or of steel and timber, or entirely of timber. Trusses of over 45 feet span shall rest upon steel or wood columns, which shall be continuous to the foundations.

In one-story buildings, trusses may, however, rest on bearing plates on brick or concrete walls of sufficient strength to carry the superimposed load, provided the height from the first floor line to the bottom of truss does not exceed 18 feet.

If trusses are framed of steel they shall be constructed in accordance with the provisions of this Ordinance governing the construction of steel trusses in Class "A" buildings.

Trusses of timber and iron or steel shall be built in accordance with the allowed unit stresses for steel provided in Section 48 of this Ordinance, and of timber in accordance with the provisions of Section 44 of this Ordinance.

Framing of trusses shall be in accordance with standard practice. Timber in tension or compression shall be stressed only in the direction of the fibers.

#### Timber Details.

Section 127. All wood beams, joists and other timbers in the party walls of every Class "C" building shall be separated from the beam or timber entering in the opposite side of the wall by at least four (4) inches of solid mason work. All wood trimmer and header-beams or joists shall be proportioned to carry with safety the loads they are intended to sustain.

Every wood header or trimmer more than six (6) feet long, used in any building, shall be hung in stirrup irons of suitable thickness for the size of the timbers. Every wood beam, or joist, except header and tail beams, shall rest at least four (4) inches on the wall, or upon the girder, as authorized by this Ordinance. The ends of all wood floor and roof beams, where they rest on brick walls, shall be cut to a bevel of three (3) inches in their depth.

All wood floor and wood roof beams shall be properly bridged with cross-bridging, and the distance between bridgings, or between bridging and walls shall not exceed eight (8) feet. Solid bridging not less than two (2) inches thick shall be placed between joists over all girders.

All wood joists shall be trimmed away at least one and one-half (1½) inches from all flues and chimneys, whether the same be smoke, air or any other flues or chimneys. The trimmer beam shall not be less than eight (8) inches from the inside face of a flue and four (4) inches from the outside of a chimney breast, and the header beam not less than two (2) inches from the outside face of the brick or stone work of the same, except that for the smoke-flues of boilers and furnaces where the brick work is required to be eight (8) inches in thickness, the trimmer beam shall not be less than twelve (12) inches from the inside of the flue. The header-beam carrying the tail beams of a floor, and supporting the trimmer arch in front of a fireplace, shall not be less than twenty (20) inches from the chimney breast.

Cutting for piping or other purposes shall not be done so as to reduce the strength of the supporting parts below that required by the provisions of this Ordinance.

No joists or girders shall be cut into at a distance greater than 12 inches from bearing.

All wood partitions shall have solid caps and sills and at least one row of bridging not less than two (2) inches thick, and of the full depths of the standing studing, and all solidly blocked behind the ribbon on the line of the spring of the cove. Bearing partitions shall have double plates.

Double studs shall be used on the sides and top of all openings with heads and truss braces cut in and secured.

### Anchors and Ties.

Section 128. Where a steel beam acting as a girder or a tie beam rests upon a brick wall it shall have an anchor made of two angles riveted to the end of the beam and projecting at least six inches on each side.

Where wooden girders rest upon walls they shall be fastened thereto by two iron anchors of at least  $\frac{1}{2}$  square inch in section, at least three feet long and with iron washers at the outer end at least 6 inches x 6 inches x  $\frac{3}{8}$  inch. The other end shall be turned down at least two inches and fastened to the girder in such a way that the anchor is self-releasing. Box anchors answering the same requirements may be used.

Where wooden joists rest upon walls they shall be fastened with anchors as required for girders, one anchor being used in every eight feet of wall.

Where girders or joists parallel a wall they shall be anchored every eight feet in the same manner.

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Girders resting on columns shall be anchored thereto or to the next girder with two iron tie-straps of at least  $\frac{1}{2}$  square inch section.

Joists resting on girders shall be lapped one foot and spiked together or shall be connected with iron straps of at least  $\frac{1}{2}$  square inch cross section. One such strap shall be used every eight feet along the girder, and those joists having wall anchors shall be strapped, the object being to form a continuous tie across the building.

### **Floors.**

Section 129. Floors shall be built with timber joists laid as prescribed by Sections 127 and 128 of this Ordinance.

### **Roofs.**

Section 130. Roofs shall be built as floors or upon trusses.

### **Partitions.**

Section 131. Partitions shall be built of studding constructed as described in Sections 125 and 127 of this Ordinance. All plastering, where required, shall be done upon metal or wooden lath.

### **Ceilings.**

Section 132. All ceilings shall be of metal or wooden lath, plastered where required, or of sheet metal.

When ceilings are suspended below bottom of joists and not in contact with same, the bottom of said joists throughout the concealed space thus formed shall be metal lathed and plastered not less than two heavy coats.

### **Walls.**

Section 133. All exterior walls of Class C buildings, including out shafts and courts, shall be built of brick, stone, interlocking hollow tiles or concrete except as provided in Section 134 of this Ordinance. They may be built as continuous walls without openings, of the thickness given below. If provided with openings the bearing stress shall not exceed the allowed bearing per unit of area as given in Section 58 of this Ordinance. Exterior walls of interlocking hollow tiles shall not exceed

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two stories in height above the basement and shall be of the same thickness as required of brick.

Walls may be built supporting a portion of a floor in addition to their own weight, or self-supporting curtain walls only, in which latter case columns shall be built in the wall to carry the floor loads. Where walls support floor loads the center of any column or stud partition supporting floor loads shall be at a distance not greater than twenty-four feet from the wall.

The thickness of bearing walls for any building of brick, stone or plain concrete not over fifty-five feet in height nor over eighty-seven and one-half feet in depth when used only as a dwelling, lodging house, hotel or tenement house above the first floor, shall not be less than as given in the following table, except that party walls shall be four inches thicker:

**Maximum Elevation.**

	Fourth story (55 ft.)	Third story (43 ft.)	Second story (30 ft.)	First story (16 ft.)	Basement
1-story building	13	9	9	9	13
2-story building	13	13	13	13	13
3-story building	17	13	13	13	13
4-story building	17	17	13	13	13

If any story exceeds in height the number of feet prescribed in the table, the thickness of the walls throughout such story shall be increased four inches for every five feet or fraction thereof in excess of the tabulated height.

No nine-inch wall shall be used as a party wall.

All bearing walls other than those given above shall have a thickness in accordance with the following table, except that party walls shall be four inches thicker in all cases:

## Maximum Elevation.

	6th story (84 ft.).		5th story (71 ft.).		4th story (59 ft.).		3d story (47 ft.).		2d story (34 ft.).		1st story (20 ft.).		Basement.....	
	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.
1st story .....	17	13												
2d story .....	17	17	13											
3d story .....	21	17	17	13										
4th story .....	21	17	17	17	17									
5th story .....	25	21	17	17	17	17								
6th story .....	25	21	21	17	17	17	17	17	17	17	17	13		

If any story exceeds in maximum elevation the number of feet described in the table the thickness of each wall throughout such story shall be increased four inches for every five feet or fraction thereof in excess of the tabulated height.

Buildings may be built of more stories than as herein provided, but the thickness for the heights shall not be decreased and all changes in thickness shall be made at a floor level.

## Curtain Walls.

Section 134. Self-supporting curtain walls built between piers or iron or steel columns, and not supported on steel or iron girders, shall be not less than thirteen (13) inches thick for forty-six (46) feet of the upper most height thereof, or to the tier of beams nearest to that height; and they shall be increased four (4) inches for every additional section of forty (40) feet, or to the tier of beams nearest to the height. They shall not be used as bearing walls, but the floor loads shall be carried on steel or cast iron columns built into the walls.

Curtain walls supported at every floor line and at roof by a frame of steel or reinforced concrete girders

and columns and constructed as required for Class A or Class B buildings, will be permitted in Class C buildings; provided said frame is tied together in both horizontal directions at every floor and roof line with steel or reinforced concrete ties, struts or girders spaced not to exceed twenty feet apart and of spans not exceeding twenty-five feet between walls, and not exceeding twenty feet between columns and walls or between columns.

Interior columns shall be of steel or reinforced concrete. Steel columns, girders, ties or struts shall be fireproofed as provided for Class A buildings.

Reinforced concrete ties or struts shall be not less than 10 inches wide and the depth shall be not less than that of the floor joists. The area of steel reinforcement in ties or struts shall be not less than one (1) per centum of the area of the concrete, in cross section, and the reinforcement shall be rigidly connected to the wall column or girder reinforcement.

### Court Walls.

Section 135. The walls of all outer and lot line courts and shafts shall have walls constructed in same manner as required for exterior walls.

Walls of interior courts and shafts may be constructed with timber studding covered on the exterior with fireproof material. Courts and shafts adjoining exterior walls are regarded as interior, provided the exterior wall adjoining same shall be unbroken by openings, or if broken by openings, said openings shall be closed by  $\frac{1}{4}$ -inch wire glass set in metal sashes and metal frames.

### Fireproofing.

Section 136. All girders and columns supporting masonry, except columns at street line, shall be fireproofed as required for similar members of Class A buildings.

### Bond Iron.

Section 137. Bond iron at least three inches by one-quarter inch shall be bedded in the center of the wall at each tier of floor and ceiling joints of all Class C

buildings and run around the entire walls of the building. Interlocking hollow tiles in Class C buildings may have the bond iron placed flush with the inside edge of the wall.

## PART X.

### PROVISIONS RELATING TO MILL CONSTRUCTION BUILDINGS.

#### Mill Construction.

Section 138. The term "Mill Construction" refers specifically to the construction of the interior frame of Class "C" buildings.

All restrictions of Class "C" buildings not specifically excepted herein shall apply to this class of buildings.

The specific requirement of Mill Construction is that the buildings of this type shall be built without concealed air spaces. No clause shall be construed to render void this requirement.

#### Inside Framing.

Section 139. Inside loads shall be supported upon a framing of wood posts, girders and beams, none of which shall be less than eight inches in either of its cross dimensions. Wood posts shall not be of smaller sectional area than 100 square inches, nor be less than 10 inches in either dimension, except for posts in the top story, which shall not be of smaller sectional area than 64 square inches, nor be less than eight inches in either dimension. All columns shall be squared at right angles to their axis.

Wood posts shall have cast iron or steel caps or boxes so constructed as to form a base for the next post above. The ends of the girders shall be secured to the cap or box in such a manner as to be self-releasing. Other timber details shall be as required for buildings of Class "C."

Cast iron columns and steel columns, girders and beams may be used if fireproofed and constructed as required for Class "A." All steel beams or girders shall be at least eight inches deep.

### Floors.

Section 140. The lower floor may be of concrete if built directly on the ground.

Wood floors shall be of plank not less than three inches in thickness, splined or tongued and grooved, covered with a wearing floor of boards not less than 1 inch thick laid in a crosswise or diagonal direction, tongued and grooved and properly nailed. Between the wearing floor and the planking there shall be placed two thicknesses of carefully laid waterproof material, and this material shall be flashed at least 3 inches around all walls and posts and columns and openings and protected with mouldings or base.

### Roofs.

Section 141. Roofs shall be of plank not less than three inches in thickness, splined or tongued and grooved.

### Partitions.

Section 142. All partitions separating manufacturing, store or merchandise occupancies, in the basement and first story, and in the second story, where same is at or near the level of a street from which it has an entrance, shall be of masonry not less than 12 inches thick, but if non-bearing, may be not less than 8 inches thick.

All other partitions shall be either masonry, terra cotta or metal lath on metal studs; except they may be entirely of 2-inch tongued and grooved plank.

### Plastering.

Section 143. Masonry or terra cotta walls may be plastered directly upon their surface, or upon metal lathing on metal furring. No wood furring shall be used and no plaster shall be applied to any wood or wooden lath.

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## PART XI.

### PROVISIONS RELATING TO THE CONSTRUCTION OF FRAME OR WOODEN BUILDINGS.

Section 144. A frame or wooden building is a building or structure whose exterior walls, or a portion thereof, are constructed of wood. Wooden frames or frame or wooden buildings covered with metal, plaster, tiles, or terra cotta or veneered with masonry shall be deemed to be frame or wooden structures.

No frame or wooden building now erected within the fire limits shall be enlarged or built upon.

No frame or wooden building now erected within the fire limits shall be repaired without a permit from the Board of Public Works.

Section 145. Frame or wooden buildings shall be limited to a height of forty (40) feet, according to the provisions of Section 78.

#### Walls.

Section 146. The walls of frame or wooden buildings shall be constructed with studding covered with weather boarding on the outside. No uncovered studding will be allowed against the wall of an adjoining building or structure.

#### Thickness of Foundation Walls.

Section 147. Brick and concrete foundations for frame or wooden buildings, one and two stories in height, used as dwellings, must not be less than eight (8) inches thick, and not over four (4) feet high. When the foundations are more than four (4) feet high they must not be less than thirteen (13) inches thick.

Foundations for three-story frame or wooden buildings shall not be less than thirteen (13) inches thick, and for buildings over three stories the foundations shall not be less than seventeen (17) inches thick.

When foundation walls of frame or wooden buildings are used for embankment or retaining wall, two and three story buildings with basement shall have foundation or basement walls of brick or concrete not less

than thirteen (13) inches thick, and not higher than eight (8) feet from top of top footing to bottom of first floor joists (first tier).

If a deeper basement be desired the walls thereof shall be not less than seventeen (17) inches thick; the bottom of footing of said walls shall not be higher than ten (10) feet from top of top footing to under side of first story floor joists, and the footing shall have a spread of one-half ( $\frac{1}{2}$ ) the thickness of the wall resting on it.

Where it is not allowable to have footings on the outside of a foundation or basement wall, the footings must extend far enough on the inside to make them the required width.

### **Size of Studding for Exterior Walls and Bearing Partitions.**

Section 148. For a building of two stories or less in height except factories, mills or warehouses, the studding for the outside walls and bearing partitions shall not be less than 2x4 inches; for a building of three stories in height, the studding shall not be less than 3x4 inches, to the bottom of the upper floor joists, and 2x4 inches for the remaining height.

Where the bearing partitions are less than twelve (12) feet apart, the studding may be less than the outside walls, but never less than 2x4 inches. Partitions dividing several stairways and sliding doors may by permission of the Board of Public Works be less than 3x4 inches.

Studding on the exterior and interior walls of buildings shall not be placed more than sixteen (16) inches from centers.

The underpinning of buildings shall be one (1) inch thicker than the studding of the story immediately above, and said studding shall not be placed more than sixteen (16) inches from centers.

### **Dividing Partitions.**

Section 149. All dividing partitions between buildings shall be close boarded from the lower floors to the ground, and from the upper ceiling close to the under

side of roof boarding, so as to effectually check all connection from one building to another. Where a large building is divided into tenements the boarding shall be applied on each dividing partition. The distance between dividing partitions shall not exceed twenty-five (25) feet.

### Framing.

Section 150. When stories are framed separately, each tier of studding must have top and bottom plates, and the top plates must be doubled; when stories are not framed separately, proper bridging must be placed behind the ribbon at the ceiling line and on top of the joists at the floor line. Bridging must be two (2) inches thick and of the full width of the studding in every case.

All wood beams or joists shall be trimmed away at least one and one-half ( $1\frac{1}{2}$ ) inches from all flues and chimneys, whether the same be a smoke, air or any other kind of a chimney or flue.

The trimmer beam shall not be less than eight (8) inches from the inside face of a flue, and four (4) inches from the outside of a chimney breast, and the header beam must not be less than two (2) inches from the outside of the brick or stone work of the same, except that for the smoke flues of boilers and furnaces where the brick work is required to be eight (8) inches in thickness the trimmer shall not be less than twelve (12) inches from the inside of the flue.

All openings through partitions and walls shall be trussed or provided with carrying girders.

### Bridging.

Section 151. All stud walls, or partitions hereafter built, altered or repaired, shall have one row of bridging for every seven feet in height over the first seven. Said bridging shall in all cases extend to the lathing or sheathing so as to prevent the passage of fire and smoke, and shall be the same thickness as the studding. All outside walls and cross-partitions shall be thoroughly angle braced; all joists shall have solid end blocking. All buildings over twenty-five (25) feet in

width shall have a row of solid blocking over girder or partition of stairways. A row of cross-bridging at least two (2) inches thick must be placed between the floor joists at least every eight (8) feet.

### **Furring.**

Section 152. When a chimney is furred out, the space between the chimney and the breast shall be so built that the passage of fire and smoke shall be intercepted, and wherever cove ceilings are used they shall be solid blocked between the studding at the spring of the cove.

### **Bay Windows.**

Section 153. In frame or wooden buildings the space between bay, oriel or swell windows shall not be less than five (5) feet in width, measured on outside of building clear of finish; provided that in buildings built on lots having a frontage of twenty-five (25) feet or less, the space between said bay, oriel or swell windows may be decreased, providing the studding in said space shall be increased in thickness so as to contain the same amount of lumber as would be contained in the studding of the piers in the aforesaid spaces of five (5) feet, but the spaces shall be at least two (2) feet six (6) inches between bays in any case.

Such windows may project not more than thirty-six (36) inches over the street line, measured to the finish; they must not be more than ten (10) feet wide, measured from end to end, and the finish of their soffits must be at least ten (10) feet above the sidewalk, unless the window is entirely back of the street line.

### **Frame Factories Not Over Two (2) Stories High.**

Section 154. The height of frame or wooden buildings of two stories or less used as factories shall be limited to thirty-five (35) feet and the exterior and bearing walls of said buildings shall be built of 2x6 studs sixteen (16) inches from centers.

### Frame Factories Over Two Stories High.

Section 155. All frame or wooden buildings more than two (2) stories high hereafter erected or enlarged to be used as factories, shall be constructed as follows: The weights of all the floors shall be concentrated at certain points, and no support shall rest directly upon a stud wall, but all beams, girders, and girders supporting floors shall rest directly upon posts. Said beams and girders, supporting floors, shall not be more than nine (9) feet apart; upon these shall rest the floor, which shall extend from one girder or beam to another, and shall not be less than of three (3) inches thick plank.

Planks shall be laid to the end of the timbers.

The filling between posts and walls shall be built of not less than 2x4 inch studs, 16 inches from centers.

### Sheds in Fire Limits.

Section 156. Sheds erected within the fire limits, if not constructed entirely of incombustible material, shall have a timber frame, without boarding, covered on the outside and roof with corrugated iron or sheet metal.

Sheds shall be erected on the ground, shall not exceed fifteen (15) feet in height, shall be open on at least three sides and shall not cover an area exceeding fifteen hundred (1500) square feet.

No fence shall be used as any portion of such shed.

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## PART XII.

GENERAL PROVISIONS RELATING TO CERTAIN  
BUILDINGS DETERMINED BY THE NATURE OF  
THE BUSINESS CONDUCTED THEREIN.

Section 157. There are included in this Part certain Provisions which shall act as additions to the provisions of this Ordinance relating to the construction of buildings.

**Theatres.**

Section 158. For the purpose of the Ordinance a theatre is designated as a building which contains seats for the public; and to which an admission fee is charged, and in which movable scenery is used.

All theatres hereafter constructed shall be of Class "A" construction.

The following special provisions shall apply to their construction, in addition to the provisions relating generally to Class "A" buildings.

**Permit to Use Building.**

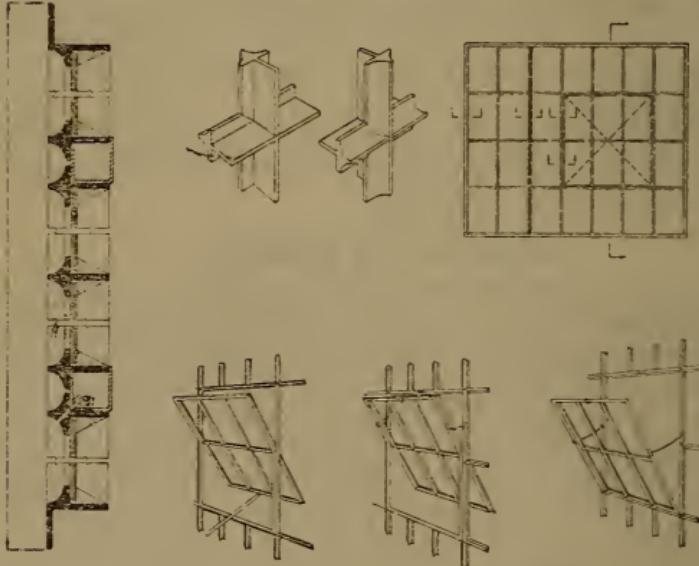
Section 159. Every theatre hereafter erected, to be used for theatrical or operatic purposes, must be constructed in accordance with the requirements of the Ordinance relating to Class "A" or steel frame construction. No building which at the time of the passage of this Ordinance is not in actual use for theatrical or operatic purposes, and no building hereafter erected not in conformity with the requirements of this Ordinance, shall be used for theatrical or operatic purposes, until the same shall have been made to conform to the requirements of this Ordinance. And no building herein described shall be opened to the public for operatic or theatrical purposes until the Board of Public Works shall have approved the same in writing, as conforming to the requirements of this Ordinance, and the Tax Collector shall refuse to issue any license for any performance in any such building until a certificate in writing of such approval shall have been given by said Board of Public Works.

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### Frontage and Courts.

Section 160. Every such building shall have at least one front on the street, and in such front there shall be suitable means of entrance and exit for the audience. In addition to the aforesaid entrances and exits on the street there shall be reserved for service in case of an emergency and open court or space on the side not bordering on the street, where said building is located on a corner lot, and on both sides of said building where there is but one frontage on the street. In the case of a one-story building having an area not exceeding 4,000 square feet and with a seating capacity of not less than 500 people, a court five (5) feet wide on one side only shall be required, provided that all seats shall be on one floor, and no galleries be allowed in such building.

In all other theatres the width of such open court or courts shall not be less than seven feet where the seating capacity is not over 1,000 people; above 1,000 and not more than 1,800 people, eight feet in width, and above 1,800 people, ten feet in width. Said open court or courts shall begin on a line with or near the proscenium wall and shall extend the length of the auditorium proper, to or near the wall separating the same from the entrance lobby or vestibule.

A separate corridor shall continue to the street from each open court, through such superstructure as may be built on the street side of the auditorium, with continuous walls of brick or fireproof materials on each side of the entire length of said corridor or corridors, and the ceiling and floors shall be fireproof. Said corridor or corridors shall not be reduced in width, by more than three feet, from the width of the open court or courts, and in no case shall the width of said corridor be less than four (4) feet and there shall be no projection in the same; the outer openings to be provided with doors or gates opening toward the street. During the performance the doors or gates in the corridors shall be kept open by proper fastenings; at other times they may be closed and fastened by movable bolts or locks. The said open courts and corridors shall not be used for storage purposes, or for any purpose what-

soever except for exit and entrance from and to the auditorium and stage, and must be kept free and clear during the performance.

The level of said corridors and courts shall be graded to the sidewalk and flush therewith at all points at street entrances. The entrance of the main front of the building shall not be on a lower level than the sidewalk, and shall not be on a higher level than the sidewalk than six (6) inches, unless approved by the Board of Public Works. To overcome any differences of level in and between courts, corridors, lobbies, passages and aisles on the ground floor, gradients shall be employed of not over one foot rise to ten feet horizontal (1-10), with no perpendicular rises.

#### Exits Into Courts.

Section 161. Opening into said open courts, or on the side street, from the auditorium, there shall be not less than two exits on each side in each tier, from and including the parquet and from each and every gallery. Each exit shall be at least five feet in width in the clear, and provided with doors of iron or wood; if of wood, the doors shall be metal covered and shall be constructed as described in this Ordinance.

All of said doors shall open outwardly and shall be fastened with movable bolts, the bolts to be kept drawn during performances, unless a device satisfactory to the Board of Public Works be applied, so as to keep the same locked from without, but to unlock automatically on the application of pressure from within on a bar forming part of the door. There shall be balconies not less than four feet wide in the said open court or courts, at each level or tier above the parquet, on each side of the auditorium, of sufficient length to embrace the two exits, and from said balconies there shall be staircases extending to the ground level, with a rise of not over eight and one-half inches to a step, and not less than nine inches tread, exclusive of the nosing.

The staircases from the upper balconies to the next below shall not be less than three feet in width in the clear, and from the first balcony to the ground three feet in width in the clear, where the seating capacity is for 500 people or less; three feet and six inches in the

clear where 500 and not more than 900 people, and four feet in the clear where over 900 people, and four feet six inches in the clear where above 2,500 people. Hand rails shall be secured to the walls, three inches therefrom and about three feet above the centers of the treads, and other hand rails shall be placed on the outside of said staircases, about three feet above the centers of the treads, and secured to said staircase so as to resist a pressure of 100 pounds per linear foot, applied horizontally to said rail.

#### **Construction of Balconies and Stairways.**

Section 162. All the before mentioned balconies and stairways shall be constructed of iron throughout, including the floors, and of ample strength to sustain the load to be carried by them, and they shall be covered with a metal hood or awning, to be constructed in such manner as shall be approved by the Board of Public Works. Where one side of the building borders on the street there shall be balconies and stairways of like capacity and kind, as before mentioned, carried to the ground.

#### **Other Uses of Building.**

Section 163. When the theatre is located on a corner lot, that portion of the premises bordering on the street and not required for the use of the theatre may, if such portion be not more than sixty feet in depth, be used for offices, stores or apartments, provided the walls separating this portion from the theatre proper are carried up solidly to and through the roof, and that a fireproof exit is provided for the theatre on each tier, equal to the combined width of exits opening on open courts in each tier, communicating with balconies and staircases leading to the street in manner provided elsewhere in this Ordinance; said exit passages shall be entirely cut off by brick walls from said offices, stores or apartments, and the floors and ceilings in each tier shall be fireproof.

#### **Ordinary Exits.**

Section 164. Every theatre accommodating 250 persons shall have at least two (2) exits; when accommodating 500 persons, at least three (3) exits shall be

provided; these exits not referring to nor including the exits to the open court at the side of the theatre. Doorways of exit or entrance for the use of the public shall not be less than five feet in width, and for every additional 100 persons or portion thereof to be accommodated in excess of 500 an aggregate of 20 inches additional exit width must be allowed.

All doors of exits or entrances shall open outwardly, and be hung to swing in such manner as not to become an obstruction in a passage or corridor, and no such doors shall be closed or locked during and representation, or when the building is open to the public, unless locked by self unlocking system. Distinct and separate places of exit and entrance shall be provided for each gallery above the first. A common place of exit and entrance may serve for the main floor of the auditorium and the first gallery, provided its capacity be equal to the aggregate capacity of the outlets from the main floor and the said gallery.

No passage leading to any stairway communicating with any entrance or exit shall be less than four feet in width in any part thereof.

#### **Foyers, Lobbies, Etc.**

Section 165. The aggregate capacity of the foyers, lobbies, corridors, passages and rooms for the use of the audience, not including aisle space, between seats, shall on each floor of gallery, be sufficient to contain the entire number to be accommodated on said floor or gallery in the ratio of 150 superficial feet of floor room for every 100 persons.

Gradients or inclined planes shall be employed instead of steps, where possible to overcome slight differences of level in or between the aisles, corridors and passages.

#### **Aisles and Seats.**

Section 166. All aisles on the respective floors in the auditorium having seats on both sides of the same shall not be less than three feet wide where they begin and shall be increased in width toward the exits in ratio of one and one-half inches to five running feet. Aisles having seats on one side only shall not be less

than two feet wide at their beginning and increased in width one and one-half inches in ten running feet. All seats in the auditorium, excepting those contained in boxes, shall not be less than 32 inches from back to back, measured in a horizontal direction, and firmly secured to the floor. No seat in the auditorium shall have more than six seats intervening between it and an aisle. No stool nor seat shall be placed in any aisle.

All platforms in galleries formed to receive seats shall be not more than 21 inches in height of rise nor less than 32 inches in width of platform. The maximum number of movable seats or chairs in boxes shall be eight.

In boxes containing a greater number of seats the seats shall be fastened to the floor.

#### **Gallery Fronts, Partitions and Ceilings.**

Section 167. The fronts of each gallery shall be formed of fireproof materials, except the capping, which may be made of wood. The ceiling under each gallery shall be entirely formed of fireproof materials. The ceilings of the auditorium shall be formed of fireproof materials. All lathing whenever used shall be of metal. The partitions of that portion of the building which contains the auditorium, the entrance and vestibule and every room and passage devoted to the use of the audience shall be constructed of fireproof materials, including the furring of outside or other walls.

None of the walls or ceilings shall be covered with wood sheathing, canvas or any other combustible material. But this shall not exclude the use of wood wainscoting to a height not to exceed six feet which shall be filled in solid between the wainscoting and the wall with fireproof materials.

#### **Inside Stairways.**

Section 168. All stairs within the buildings shall be constructed of fireproof materials throughout. Stairs from balconies and galleries shall not communicate with the basement or cellar. All stairs shall have treads of uniform width and riser of uniform height throughout in each flight. Stairways serving for the exit of 50 people shall be at least four feet wide between railings, or between walls, and for every addi-

tional 50 people to be accommodated six inches must be added to their width. The width of all stairs shall be measured in the clear between hand rails. In no case shall the riser of any stairs exceed seven and one-half inches high, nor shall the treads inclusive of nosings, be less than ten and one-half inches wide in straight stairs.

No circular or winding stairs for the use of the public shall be permitted. Where the seating capacity is for more than 1,000 people there shall be at least two independent staircases, with direct exterior outlets provided for each gallery in the auditorium, where there are not more than two galleries, and the same shall be located on opposite sides of said galleries. Where there are more than two galleries, one or more additional staircases shall be provided, the outlets from which shall communicate directly with the principal exit or other exterior outlets. All said staircases shall be of width proportionate to the seating capacity as elsewhere herein prescribed.

Where the seating capacity is for 1,000 people or less, two direct lines of staircases only shall be required located on opposite sides of the galleries, and in both cases shall extend from the sidewalk level to the upper gallery, with outlets from each gallery to each of said staircases.

At least two independent stairways, with direct exterior outlets, shall also be provided for the service of the stage and shall be located on opposite sides of the same.

All inside stairways leading to the upper galleries of the auditorium shall be enclosed on both sides with walls of fireproof materials. Stairs leading to the first or lower gallery may be left open on one side, in which case they shall be constructed as herein provided for similar stairs leading from the entrance hall to the main floor of the auditorium. But in no case shall stairs leading to any gallery be left open on both sides.

When straight stairs return directly on themselves a landing of the full width of both flights, without any steps shall be provided. The outline of the landing shall be curved to a radius of not less than two feet to

avoid square angles. Stairs turning at an angle shall have a proper landing without winders introduced at said turn. In stairs, when two flights connect with one main flight, no winders shall be introduced, and the width of the main flight shall be at least equal to the aggregate width of the side flights. All stairs shall have proper landings introduced at convenient distances.

All enclosed staircases shall have on both sides strong hand rails firmly secured to the walls, about three inches distant therefrom, and three feet above the stairs, but said hand rails shall not run on level platforms and landings where the same is more in length than width of the stairs.

All staircases eight feet and over in width shall be provided with a center hand rail of metal not less than two inches in diameter, placed at a height of about three feet above the center of the treads, and supported on wrought metal or brass standards of sufficient strength, placed not nearer than four feet, nor more than six feet apart, and securely bolted to the treads or risers of stairs, or both, and at the head of each flight of stairs, on each landing, the posts or standards shall be at least six feet in height, to which the rail shall be secured.

### **Interior Walls.**

Section 169. Interior walls built of fireproof materials shall separate the auditorium from the entrance vestibule, and from any room or rooms over the same; also from any lobbies, corridors, refreshment or other rooms. All staircases for the use of the audience shall be enclosed with walls of brick or of fireproof materials approved by the Board of Public Works. The openings to said staircases from each tier shall be full width of said staircases.

No door shall open immediately upon a flight of stairs, but a landing at least the width of the door shall be provided between such stairs and such floor.

### **Proscenium Wall.**

Section 170. A fire wall shall separate the auditorium from the stage, and the same shall extend at least

four feet above the stage roof, or the auditorium roof, if the latter be higher, and shall be coped.

Above the proscenium opening there shall be a steel girder resting upon steel columns extending to foundations and of sufficient strength to support safely the load above, and the same shall be covered with fireproof materials to protect it from heat. Should there be constructed an orchestra over the stage, over the proscenium opening, the said orchestra shall be placed on the auditorium side of the fire wall and shall be entered only from the auditorium side of said fire wall. The molded frame around the proscenium opening shall be formed entirely of fireproof materials. If metal be used said metal shall be filled in solid with noncombustible material and securely anchored to the wall with iron.

The proscenium opening shall be provided with a fireproof curtain of asbestos or other fireproof material approved by the Board of Public Works sliding at each end within iron grooves securely fastened to the brick wall and extending into such iron grooves to a depth of not less than six inches on each side of the opening. Said fireproof curtain shall be raised at the commencement of each performance and lowered at the close of said performance, and be operated by approved machinery for that purpose. The proscenium curtains shall be placed at least three feet distant from the foot lights at the nearest point.

No doorway or opening through the proscenium wall, from the auditorium, shall be allowed above the level of the first floor, and such first floor openings shall have fireproof doors on each face of the walls, and the doors shall be hung so as to open from either side at all times.

#### Dressing Rooms.

Section 171. All shelving and cupboards in each and every dressing room, property room or other storage room, shall be constructed of metal, slate or some fireproof material. Dressing rooms may be placed in the fly galleries, provided that proper exits are secured therefrom to the fire escapes in the open court, and that the partitions and other matters pertaining to

dressing rooms shall conform to the requirements herein contained, but the stairs leading to the same shall be fireproof. The dressing rooms shall have an independent exit leading directly into a court or street, and shall be ventilated by windows in the external wall, and no dressing room shall be more than ten feet below street level.

### Windows.

Section 172. All windows shall be arranged to open, and none of the windows in outside walls shall have fixed sashes, iron grills or bars.

### Stage Floors.

Section 173. All that portion of the stage not comprised in the working of scenery, traps and other mechanical apparatus, for the presentation of a scene, usually equal to the width of the proscenium opening, shall be of Class "A" construction.

### Fly Galleries.

Section 174. The fly galleries entire, including pin rails, shall be constructed of iron or steel, and the floors of said galleries shall be composed of iron or steel beams filled with fireproof materials, and no wood boards nor sleepers shall be used as coverings over beams, but the said floor shall be entirely fireproof. The rigging loft shall be fireproof. All stage scenery, curtains and decorations made of combustible material shall be painted or saturated with some approved non-combustible material, or otherwise rendered safe against fire, and the finishing coat of paint applied to all woodwork shall be of such kind as to resist fire, to the satisfaction of the Board of Public Works.

Fireproofed wood may be used, if satisfactory to the Board of Public Works.

Fly galleries shall rest upon columns extending to the basement.

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### Mr. Contractor—

Do you want to know about plans being figured? The Daily Pacific Builder will keep you posted. Send for sample copy, 560 Mission street, San Francisco. Tel. Douglas 2372.

### Fire Protection.

Section 175. Stand pipes, four inches in diameter shall be provided with hose attachments on every floor and the gallery as follows, namely: One on each side of the auditorium in each tier, also one on each side of the stage on front of proscenium wall in each tier and at least one in the property room and one in the carpenter shop, if the same be contiguous to the building. All such stand pipes shall be kept clear from obstruction. Said stand pipes shall be separate and distinct, receiving their supply of water direct from the power of pump or pumps installed and maintained by the owner or lessee of the building. They shall be fitted with the regulation couplings of the fire department, and shall be kept constantly filled with water by means of an automatic fire pump or pumps, of sufficient capacity to supply all the lines of hose when operated simultaneously, and said pump or pumps shall be supplied from the street main and be ready for immediate use at all times during a performance in said building.

In addition to the requirements contained in this section there shall be provided a four-inch standpipe, running from cellar to roof, with one two-way three-inch siamese connection to be placed on street above the curb level, and with one two and one-half inch outlet with hose attached thereto on each floor, placed as near the stairs as practicable.

All buildings shall be provided with an auxiliary fire apparatus and appliances, consisting of water tank on roof or in cellar, stand pipes, hose, nozzles, whanches, fire extinguishers, hooks, axes, and other appliances, as may be required by the Fire Department, all to be of the best material and of the sizes, pattern and regulation kinds used and required by the Fire Department.

A separate and distinct system of automatic sprinklers, with fusible plugs, approved by the Board of Public Works, supplied with water from a tank located on the roof over the stage, and not connected in any manner with stand pipes, shall be placed on each side of the proscenium opening and on the ceiling or roof over the stage at such intervals as will protect every square foot of stage surface when said sprinklers are

in operation. Automatic sprinklers shall be also placed wherever practicable, in the dressing rooms, under the stage, and in the carpenter shop, paint rooms, store rooms and property rooms. The entire installation of automatic sprinklers shall be in accordance with the rules of the Board of Fire Underwriters.

A proper and sufficient quantity of two and one-half inch hose, not less than 100 feet, fitted with the regulation couplings of the Fire Department and with nozzles attached thereto, and with hose spanners at each outlet, shall always be kept attached to each hose attachment, as the Chief Engineer of the Fire Department may direct.

There shall also be kept in readiness for immediate use on the stage at least four casks of water, and two buckets to each cask. The casks and buckets shall be painted red.

There shall also be provided hand pumps or other portable fire extinguishing apparatus, and at least four axes, and also twenty five-foot hooks, two fifteen-foot hooks and two ten-foot hooks on each tier or floor of the stage.

### Lights.

Section 176. Every portion of the building devoted to the uses or the accommodations of the public, also all outlets leading to the streets and including the open courts and corridors, shall be well and properly lighted with electricity during every performance, and the same shall remain lighted until the entire audience has left the premises. All of said lights in the halls, corridors, lobbies and any other part of said building used by the audience, except the auditorium, must be controlled by a separate shut-off located in the lobby and controlled only in that particular place. Gas mains supplying the building shall have independent connections for the work shops, fly galleries and stage, and provision shall be made for shutting off the gas from the outside of the building.

All lights in passages and corridors in said building whenever deemed necessary by the Board of Public Works shall be protected with proper wire network. All border lights shall be constructed according to the

best known methods and subject to the approval of the Board of Public Works, and shall be suspended for ten feet by wire rope.

All ducts or shafts used for conducting heated air from the main chandeliers or from any other light or lights shall be constructed of metal and made double, with an air space between.

#### **Lights at Exits.**

Section 177. At each and every exit in any theatre or opera house there shall be placed and maintained a lamp in which only mineral, sperm, nut or other non-explosive oil, or electricity upon an independent circuit, satisfactory to the Board of Public Works and the Board of Fire Wardens, shall be used; and said lamp or lamps shall be lighted prior to the opening of the doors of said theatre, and shall be kept lighted until the audience shall have departed from the premises; and there shall be inscribed upon said lamp or lamps the word "EXIT" in distinctly visible letters not less than eight (8) inches high.

#### **Ventilation of the Stage.**

Section 178. There shall be provided in the roof of that portion of the building over the stage, smoke vent openings, the total net area of which shall be one-tenth of the area of the stage included between the three outer walls of the building and proscenium wall.

No single opening shall be of an area less than one-fifth of the total required area. These smoke vent openings shall be closed by shutters so constructed that they will open by their own weight. They shall be held in place by cords or ropes extending to and controlled from the open stage. As a part of each rope operating each shutter there shall be included two fusible links designed in accordance with the requirements of the Board of Fire Underwriters to open at 160 degrees Fahrenheit.

All parts of shutters and frame shall be of incombustible materials. Glass, if used, shall be plain glass. Shutters may be of two types. If shutters occupying a vertical position when closed are used, they shall be hinged at the bottom and provided with a metal weight which shall cause them to open outward. This weight

shall be so placed that the shutter is held in a closed position by the rope and on release of the rope the shutter will open its full width. If shutters built on the incline of the roof are used they shall be arranged to rest and travel on rollers. They shall be so built that they will open by their own weight and shall be held in a closed position by the rope.

These shutters shall be opened at least once a week or more often if required by the Fire Department.

No fastening or other device for holding the shutters of the smoke vent openings in a closed position, other than the ropes with fusible links shall be attached to any such shutter. The owner or lessee of any theatre or any employee of such owner or lessee violating this provision shall be guilty of a misdemeanor under the terms of this Ordinance.

No obstruction of any kind shall be placed in the way of a complete draft from the stage to the smoke vent openings except that required for the operation of the scenery. No flooring shall be placed on the girdiron but its entire surface shall be open.

#### **Steam Boilers and Heating Appliances.**

Section 179. Every steam boiler which may be required for heating or other purposes shall be located outside the building, and the space allotted to the same shall be enclosed by walls of masonry on all sides, and the floor and ceiling of such space shall be constructed of fireproof material. All doorways in said walls shall have fireproof doors. No floor register for heating shall be permitted.

No coil or radiator shall be placed in any aisle or passageway used as an exit, but all said coils and radiators shall be placed in recesses formed in the wall or partitions to receive the same. All supply, return or exhaust pipes shall be properly incased and protected where passing through floors or near woodwork. Gas furnaces shall not be used for heating purposes.

#### **Work Shop, Storage Room, Property Rooms.**

Section 180. No work shop, storage or general property rooms shall be allowed on the auditorium side of the proscenium wall, nor above or under the stage, nor in any of the fly galleries. All of said rooms or shops

may be located in the rear or at the side of the stage, but in such cases they shall be separated from the stage by a brick wall and the openings leading into such portions shall have fireproof doors on each side of the openings, hung to iron eyes built in the wall.

### **Restrictions as to Use of Building.**

Section 181. No portion of any building hereafter erected or altered, used or intended to be used for theatrical or other purposes, as in this section specified, shall be occupied or used as a hotel, boarding or lodging house, factory, work shop or manufactory, or for storage purposes, except as may hereafter be specially provided for. Said restriction relates not only to that portion of the building which contains the auditorium and the stage, but applies also to the entire structure in conjunction therewith. Stores or shops for the sale of goods shall be permitted on the ground floor. No store or room contained in the building nor the offices, stores or apartments adjoining as aforesaid shall be let or used for carrying on any business dealing in articles designated as especially hazardous in the classification of the Board of Fire Underwriters of the Pacific, nor for manufacturing purposes. No lodging accommodations shall be allowed in any part of the building communicating with auditorium.

### **Existing Buildings.**

Section 182. All existing theatres shall be made to comply with the provisions of this Ordinance, under the direction and supervision of the Board of Public Works and Fire Wardens to such extent as may be deemed necessary and practical by said Boards.

### **Diagram of Theatre on Program.**

Section 183. A diagram or plan of each theatre, gallery or floor showing distinctly the exits therefrom, each occupying a space not less than fifteen square inches, shall be printed in black lines in a legible manner on the program of the performance.

### **Right of Entry by Authorities.**

Section 184. The Mayor, the members of the Board of Supervisors, the Commissioners of the Board of Public Works, the Architect and the Inspectors of Build-

ings of the Department of Public Works, the Commissioners and Chief Engineer of the Fire Department and the Chief of the Police Department shall have the right to enter at any time any building used for theatrical or operatic purposes or for public entertainments of any kind.

### **Fire Department to Control Fire Apparatus.**

Section 185. The stand pipes, gas pipes, electric wires, hose, footlights and all apparatus for the extinguishment of fire, or guarding against the same, as in this Ordinance specified, shall be in charge and under the control of the Fire Department after the certificate has been issued by the Board of Public Works as required by this Ordinance.

### **Fire Department Detail.**

Section 186. The Chief Engineer of the Fire Department is hereby directed and it is hereby made his duty to detail one experienced member of the Fire Department for service at each and every building used for theatrical or operatic purposes to be present on the stage of each building during the progress of each and every performance held therein. The salary of the said member of the Fire Department so detailed shall be paid by the owner, lessee or manager or agent of the owner, lessee or manager of the theatre or building in which such fireman is so stationed as herein required.

### **Special Provisions Relating to Places of Amusement wherein Moving Picture Exhibitions Are Given.**

Section 187. All places of amusement hereafter to be constructed, erected or altered wherein moving pictures are exhibited for public entertainment, and where an admission fee is charged, having a seating capacity of 400 or more persons, shall be built and constructed to conform to all laws, conditions and requirements now existing or hereafter to come in force and effect relating to theatres and places where theatrical or operatic performances are given.

Section 188. All such places of amusement hereafter to be constructed, erected or altered, wherein moving pictures are exhibited for public entertainment, and where an admission fee is charged, having a seating

capacity of less than 400 persons, shall be built and constructed in accordance with the following laws, conditions and requirements, to wit:

A. All such places of amusement in the fire limits must be and shall only be contained in Class "A," Class "B," or Class "C" buildings.

All such places of amusement not contained in Class "A" or Class "B" buildings must have their interior entirely and throughout lined with sheet metal, or metal lathed and plastered. Brick, tile or concrete walls need not be lathed or plastered.

B. All aisles in the auditorium having seats on both sides of the same shall not be less than  $3\frac{1}{2}$  feet in width when the aisles are 60 feet or less in length and not less than 4 feet in width when the aisles are more than 60 feet in length. Aisles having seats on one side only shall not be less than  $2\frac{1}{2}$  feet in width when the aisles are 60 feet or less in length, and not less than 3 feet in width when the aisles are more than 60 feet in length.

C. All seats in the auditorium shall not be less than 29 inches from back to back, measured in a horizontal direction, and firmly secured to the floor. No seat in the auditorium shall have more than six seats intervening between it and an aisle. No seat nor stool shall be placed in any aisle.

D. All such places of amusement having a seating capacity of 300 or more persons shall be equipped with at least one  $1\frac{1}{2}$ -inch galvanized stand pipe in the middle of one side wall of the auditorium. Said stand pipe shall have a  $1\frac{1}{2}$ -inch direct connection with the street main. Attached to said stand pipe there shall be fifty feet of  $1\frac{1}{2}$ -inch hose, and at the end of such hose there shall be a five-eights inch play pipe.

E. In all such places of amusement of whatever seating capacity, two buckets, each containing at all times not less than three gallons of water, must be kept with two fire extinguishers immediately outside the operator's booth, or moving picture box, and said buckets and fire extinguishers shall be ready for service at all times.

F. There must be in the operator's booth a metal ventilating pipe, not smaller than six inches in diameter, which must extend through an exterior wall or roof of the building, or may be connected to a brick or patent chimney. A window opening directly to the outer air may be used in lieu of the above ventilating pipe.

G. Openings for picture and operator's view shall not be larger than 12 by 12 inches, and must have gravity doors made of No. 14 B. & S. gauge sheet iron arranged to drop freely in heavy metal grooves on inside of booth. Doors to be held in position (open) by fusible links placed in series with a single strand of cord, so arranged that cord will be suspended directly above film when in place in machine, so that in case of ignition of film the link will fuse or cord will burn and allow gravity doors to drop and close openings. There shall be no opening from the operating booth into any closet, storeroom or blind space, and but one exit door.

H. All electric wiring must conform to the rules of the national code. The operator's cabinet or picture box must be absolutely fireproof, and the picture machine must be operated entirely by hand.

The use of a motor to turn the picture machine is hereby strictly prohibited.

(See Ordinance No. 1510—New Series.)

I. No wooden fixtures, benches or appliances, unless same be metal clad and no other inflammable materials not required for the operation of moving picture machines shall be allowed in the operating room.

J. All such places of amusement shall have at least one frontage on a street, and in such frontage there shall be at least two exits, each of which is to be at least five feet wide.

In addition to such exits on the street there shall be reserved for service in case of emergency, where the seating capacity is 150 or less, one exit in the rear; where the seating capacity is greater than 150 and less than 300, there shall be one exit in the rear and an additional exit in the rear half of the auditorium; where the seating capacity is greater than 300 and less than 400, there shall be one exit in the rear and two addi-

tional exits, one of which must be in the rear half of the auditorium and which, in the case of auditoriums less than 30 feet in width, must be at the side near the center. Such rear exits, if in the side walls, must be within ten feet of the rear wall. Each exit shall not be less than five feet in width.

All exits must open into public streets, public or private alleys or into passageways at least five feet wide communicating directly with the street. Said passageways must have their interiors lined throughout with sheet metal or be metal lathed and plastered. Exits which lead into five-foot interior passageways must have no doors, but may be hung with curtains or portieres. All doors and exits must open outward and be unfastened at all times during which people are assembled. Every exit shall have over the same, in the inside, the word "EXIT" painted in legible letters not less than eight inches high; over each such exit there shall also be a red light on an independent circuit from all other lights in the building. All courts and passageways shall be lighted during the performance.

K. There shall be aisles of the width hereinbefore specified, extending the entire length of the auditorium to each and every exit opening into said streets or alleys, or passageways; there shall be space of at least ten feet between front tier of seats and screen or stage; cross aisles leading to side exits shall extend from center aisle to said exits. Where exits are at rear, aisles leading to same shall be of the maximum widths herein prescribed, throughout their entire length.

#### **Places of Public Assemblage—Halls.**

Section 189. Unless specific reference is made in this Ordinance to special buildings for public assemblage, the following provisions shall apply:

Under this heading shall be included public halls and club halls which may be used for public entertainment and although occasionally used for theatrical representation shall not be construed to be theatres as the term is used in this Ordinance, notwithstanding the fact that movable scenery be used upon the stage thereof; **Provided, however,** that such halls shall not be used for theatrical representations on more than three consecu-

tive days nor more than thirty times in a year.

Halls and places of assemblage other than theatres shall have but one gallery above the main floor, and its seating capacity shall not exceed one-fourth the total seating capacity of the hall.

All buildings containing places of assemblage seating more than five hundred (500) people above the first floor shall be of Class "A" or Class "B" construction.

No place of public assemblage seating over 300 people shall be above the second floor.

Inside the fire limits all buildings used as places of public assemblage (except churches), seating over eighteen hundred (1800) people, shall be of Class "A" construction.

If seating from one thousand (1000) to eighteen hundred (1800) people, shall be of Class "A" or Class "B" construction.

If seating less than one thousand (1000) people, shall be of Class "A," Class "B" or Class "C" construction.

Outside the fire limits halls may be of frame construction, but if seating over eight hundred (800) persons the roof shall be of metal supported on steel trusses and steel purlins and steel columns carried to the foundation.

Churches may be of frame construction outside of the fire limits, but all towers and spires must be covered with incombustible materials.

### Exits.

All exits shall have doors hinged to swing out and shall be not less than five (5) feet wide.

Halls having a seating capacity of eighteen hundred (1800) people or over shall have one exit for every four hundred and fifty (450) people.

If situated on a street corner, shall have at least two (2) exits to each street. If on inside lot shall have at least two (2) exits to front street and two (2) exits to rear street, or to a court built full length of hall, at least seven (7 feet 0 inches) wide open to front and rear streets, or to two such courts both open to front street.

If staircases are necessary they shall not be less than six (6) feet wide.

Halls having a seating capacity of one thousand (1000) to eighteen hundred (1800) people shall have at least four (4) exits situated as above. Staircases if necessary shall not be less than five feet six inches (5 feet 6 inches) wide.

Halls having a capacity of four hundred (400) to one thousand (1000) if on a street corner shall have two (2) exits to front street and one (1) exit to side street. If on inside lot shall have two (2) exits to front street and one (1) exit on or near the rear leading to rear street or to a court leading to front street. Courts and stairs shall not be less than five (5 feet 0 inches) wide.

In Class A or B buildings the side courts will not be required, but the same number of exits as widely separated as possible will be required.

Halls having a capacity of less than four hundred (400) people shall have two (2) front exits, or if on a street corner shall have one (1) front exit and one (1) side exit, or may have one (1) front exit and one (1) rear exit to street or alley. Stairs shall be not less than five (5) feet wide.

If halls are situated above the first floor exits may open into vestibules with stairs leading to streets.

There shall be at least one (1) foot width of stairway for every one hundred people or fraction thereof.

Where one side of hall borders on street, alley or court, iron balconies with stairs leading to ground may be used in lieu of stairs and may be hinged and suspended by weights when not in use, if on public street or alley.

Where halls occur in different stories of a building the stairs leading from same shall be increased one foot in width of each stair for each additional story where hall or halls occur; excepting in Class "A" and "B" buildings where this provision shall not apply.

Galleries seating more than one hundred (100) people shall have two stairways, one on each side. There shall be at least one foot width of stairway for every one hundred (100) people or fraction thereof. No stairway shall be less than three feet six inches (3 feet 6 inches) wide.

Winders shall not be permitted in any staircase leading from a hall or from a gallery therein.

The provisions relating to aisles and seats in theatres shall apply to halls. When movable seats are used they shall be subject to the same regulations regarding aisles and exits as are fixed seats.

Where the building is of Class "C" construction there shall be a brick or concrete wall extending from basement to roof dividing the hall for public assemblage from other parts of the building. Such wall may have not more than two openings in each story connecting the hall with other parts of the building. Such openings shall be not over eight feet in width, and shall be not less than forty feet apart, and shall be closed by iron doors.

### Cubic Air Space.

Section 189A. In all buildings which are designated to be used as a whole or in part as public buildings, public or private institutions, school houses, churches, ~~public places of assemblage, or places of public resort,~~ and all buildings which are designed to be used in whole or in part as a factory, workshop, mercantile or other establishment, and with accommodations for ten or more employees, provision shall be made for at least fifteen square feet of floor space and 200 cubic feet of air space for each occupant to be accommodated in each room therein, and for supplying at least thirty cubic feet of pure air per minute for each occupant thereof.

In every building, or part of building, intended for audience room only, as a theatre, hall or nickelodeon, provision shall be made for supplying at least thirty cubic feet of pure air per minute for each occupant thereof. In open buildings for general purposes of exposition or public assemblage, in which the roof span exceeds one hundred and fifty (150) feet, and the steel construction is exposed with no air space, the roof surface may be of planking, not less than two and three-quarters (2 $\frac{3}{4}$ ) inches thick and laid tight, provided that it is fireproofed on the exterior by a covering of metal, tile, slate or other equally fireproof material, and provided that all portions of the building except the free spans exceeding one hundred and fifty (150) feet be of

fireproof construction. In no case shall the planking roof surface come nearer than thirty feet to the first floor level.

### **Tenement Houses and Apartment Houses.**

Section 190. Tenement houses and apartment houses shall be constructed in accordance with the provisions of that certain act of the legislature of the State of California entitled: "An Act to Regulate the Building and Occupancy of Tenement Houses in Incorporated Towns, Incorporated Cities and Cities and Counties, and to Provide Penalties for the Violation Thereof." Approved April 16, 1909, and with the provisions of any and all amendments thereto."

### **Hotels and Lodging Houses.**

Section 191. In all buildings other than Class "A" or Class "B" used as hotels or lodging houses all partitions must be lathed and plastered and must run to the ceiling.

All buildings used as hotels and lodging houses with sleeping accommodations for more than one hundred people shall be Class "A," Class "B" or Class "C."

No frame or wooden buildings used as hotels or lodging houses shall be over three stories in height.

### **Exhibition Buildings.**

Section 192. Buildings for fair and exhibition purposes, towers for observation purposes and structures for similar uses, outside of the fire limits, whether temporary or permanent in character, shall be constructed in such manner and under such conditions as the Board of Supervisors may prescribe, provided, that in open buildings for general purposes of exposition or public assemblage in which the roof span exceeds one hundred and fifty (150) feet, and the steel construction is exposed with no air space, the roof surface may be of planking, not less than two and three-quarters (2 $\frac{3}{4}$ ) inches thick laid tight, provided that it is fireproofed on the exterior by a covering of metal, tile, slate or other equally fireproof material, and provided that all portions of the building except the free spans exceeding one hundred and fifty (150) feet be of fireproof construction. In no case shall the planking roof surface come nearer than 30 feet to the first floor level.

### Smokehouses.

Section 193. All smokehouses shall be of fireproof construction, with brick walls, iron doors and brick or metal roofs. An iron guard shall be placed over and three feet above the fire, and the hanging rails shall be of iron. The walls of all smokehouses shall be built up at least three (3) feet higher than the roof of the building in which they are located.

### Power Woodworking Mills, Etc.

Section 194. No person, firm or corporation shall construct or cause to be constructed, maintain or cause to be maintained, occupy or cause to be occupied, any structure or building hereafter used, or intended to be used as a planing mill, saw mill, sash or door factory, furniture or cabinet factory, or for any other woodworking purposes, if planers, stickers or jointers are used, and run by power, without first obtaining a permit so to do from the Board of Supervisors.

Whenever application is made to the Board of Supervisors for any such permit, the Clerk of said Board shall furnish to the applicant a notice to be posted conspicuously in front of the premises sought to be so occupied setting forth that such permit has been applied for, the nature of the same, and the time and place where the application for the granting of the same will be heard. Such notice must be posted immediately after the filing of the application and be kept posted until said application is finally granted or denied.

An opportunity to be heard shall be given to all interested persons, and on the granting or refusing of said permit, the Board shall exercise a sound and reasonable discretion.

No building shall be constructed to be used as a planing mill, saw mill, sash and door factory, furniture or cabinet factory or other woodworking purposes, if planers, stickers or jointers are used and run by power unless the same be of heavy timber, "mill construction" frame and floors.

The exterior walls and roof shall be corrugated iron fastened to the timber frame and without boarding, if outside the fire limits, unless of Class "A," "B" or "C" construction. Said building shall not exceed two

(2) stories, or thirty feet in height, shall have floors not less than two (2) inches thick extending to the outer covering of the building; shall have all elevators, hoists, stairs, chutes and other vertical floor openings tightly closed with wood partitions and doors or trapped; and the outer wall, floor and roof systems shall be constructed without concealed spaces.

No building already erected and not now so used shall hereafter be used as a planing mill, saw mill, sash and door factory, furniture or cabinet factory, or for any other woodworking purposes, if planers, stickers or jointers are used, and run by power, unless it is made to conform to the above specification.

In buildings of Class "C" used as planing mills, wagon or carriage factories, furniture factories or any other woodworking factories, all joists and studding bearing weight, shall be covered with metal lath and plaster and the floor shall be double, with the top floor laid over three-quarters ( $\frac{3}{4}$ ) of an inch of mortar, or two thicknesses of asbestos paper, unless such building is constructed on the slow burning or mill construction plan, in which case the floor shall extend from one beam to another and shall not be less than three (3) inches thick.

All planks shall be laid to the end of the timbers.

#### **Grain Elevators and Cold Storage Plants.**

Section 195. Nothing in this Ordinance shall be construed as to apply to or prevent the erection of what are known as grain elevators, as usually constructed, provided they are erected on tide water, in isolated localities and outside of the fire limits, under such conditions as the Board of Public Works may prescribe.

Nothing in this Ordinance shall be construed so as to apply to or prevent the erection of cold storage plants to a height of not exceeding 55 feet, when such structures are erected in the following described district.

Commencing at the intersection of the center line of Water Front street with the center line of Army street; running thence westerly along the center line of Army street to the center line of Kentucky street; thence southerly along the center line of Kentucky street to the center line of Second avenue South and the center

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line of Railroad avenue; thence along the center line of Railroad avenue in a southerly direction to the center line of Fourth avenue South; thence southeasterly along the center line of Fourth avenue South to the center line of I street South; thence southwesterly along the center line of I street South to the center line of Ninth avenue South; thence southeasterly along the center line of Ninth avenue South to the center line of D street South; thence northeasterly along the center line of D street South to the center line of Seventh avenue South; thence southeasterly along the center line of Seventh avenue South to the center line of B street South; thence northeasterly along the center lines of B street South and China street to Water Front street; thence along the center line of Water Front street the point of commencement.

And provided further that such cold storage plants have a fireproof roof, and that their exterior walls be covered with metal, asbestos, concrete or other fireproof material, and that the hallways, passages and elevator shafts be protected by a first class automatic sprinkling system.

#### Public Laundries and Washhouses.

Section 196. Repealed by Ordinance No. 3300 (New Series), approved June 25, 1915.

#### Stable Permits.

Section 197. It shall be unlawful for any person, firm or corporation hereafter to construct any building or premises to be used as a stable for horses, mules, cows or other animals without first obtaining a permit from the Board of Supervisors and the Board of Health, specifying the name of permittee, and the location of building or premises to be used as a stable and the number of animals intended to be kept therein.

It shall be unlawful for any person, firm or corporation to maintain as a stable for horses or mules any existing structure not used at the date of the passage of this Ordinance for stable purposes without first obtaining a permit from the Board of Supervisors and Board of Health, specifying the name of the permittee, the location of the building or premises to be used as such

stables and the number of animals to be kept therein.—**Section 197 declared unconstitutional, In re Luigi Dondero, 19 Cal. App. Rep. 66.** See also Ordinance No. 2639 (New Series).

### Stable Buildings.

**Section 198.** All buildings used for stabling animals in the basement shall be Class "C" mill construction.

All buildings used for stabling animals above the first or ground floor shall be Class "A" or "B" construction if more than 125 head are kept therein; if 125 head or less are kept therein, they shall be Class "C" mill construction. All buildings used for stabling animals on the first or ground floor may be of frame construction, provided they are outside the fire limits and not more than 125 head are kept therein.

Stables capable of accommodating 10 to 50 animals shall be provided with fully equipped fire hose reels or racks connected to an adequate source of water supply through not less than 3-inch stand pipes; said reels or racks shall be of such number and so placed that 50 feet of cotton hose and  $\frac{3}{4}$ -inch nozzle with a water pressure of 20 pounds per square inch, all parts of the building may be reached.

Stables capable of accommodating 50 animals or more shall be equipped with one 5,000 gallon water tank on roof, as described in Section 266 of this Ordinance and connected with a  $\frac{3}{4}$ -inch supply pipe. Wet stand pipes of 3-inch caliber shall be run therefrom, fully equipped with proper valves, connected thereto  $1\frac{1}{2}$ -inch cotton hose on reels or racks, and shall be of such number and so placed that with 50 feet of hose any part of the building may be reached.

In all stable buildings of Class "A," "B" or "C" mill construction there shall be one emergency runway not less than four feet in width in the clear, besides the regular runway.—As amended by Ordinance No. 1462 (New Series), approved January 24, 1911.

The floor of all buildings or premises hereafter constructed and intended to be used for the purpose of stabling horses, mules, cows or other animals must be of concrete not less than three inches thick with a layer

of cement or asphaltum not less than one-half inch thick.

A semi-circular or V-shaped gutter drain shall be constructed at the time the floor is put down in the rear of those portions or parts of the premises where stalls are to be constructed.

This gutter drain shall have a uniform thickness the same as that of the floor of the stable and shall not be less than four inches inside measurement at the floor level, nor less than three inches in depth, with sufficient fall to carry off all liquid discharges from the stalls.

In all buildings hereafter constructed for stabling animals on the first floor when of Class C or frame construction, the side walls or foundation of the structure shall be of concrete or brick laid in cement mortar not less than eight (8) inches thick at the top and shall continue to a height of not less than one foot above the surrounding surface soil, and shall have no breaks or openings except when necessary for doors.

Wash racks, when located within the stable, must be provided with surface drain to connect with sewer, provisions for same to be made before putting down the floor.

Gutter drains in rear of stalls shall drain into sewer in such manner as to fully comply with provisions of "The Building Law" of the City and County of San Francisco.

Every person, firm or corporation now and hereafter maintaining any stable or other place in which manure or stable refuse accumulates shall provide a galvanized iron, tin, zinc or other metal lined box or bin within the area walls of the stable; said box or bin shall be vented by means of a duct or flue not less than 12 inches square extending through the roof. The termination of said vent shall be carried above the roof of adjoining premises, and in no instance be less than ten feet from any window or light well.

All manure or stable refuse must be removed from the stable at least semi-weekly, and at all times shall such stable or other place, and every part and appur-

tenance thereof, be kept in a clean and sanitary condition.

No ventilators or windows which may be used as ventilators shall be constructed in the area walls of the stable if within ten feet of adjacent property lines, except by special consent of the Board of Health, which must appear on the face of stable permit.

All stables must be ventilated by means of louvre ventilators in the roof, or by openings in area walls where said walls are more than ten feet from adjacent property lines, except as herein provided.

Every stable or other place where horses, mules, cows or other animals are kept must have not less than 1,000 cubic feet of air space in the clear for each and every animal kept therein.

It shall be unlawful for any person, firm or corporation to use any stable or other place where animals are kept as a place of storage for fruits, vegetables, meats milk or any other foodstuffs.

All feed excepting hay shall be kept in a metal lined bin or metal lined room, so constructed as to be rat-proof.

The provisions of this Ordinance shall apply to all stables that shall hereafter be conducted in structures which are now existing but are not used for stable purposes at the date of the passage of this Ordinance.

### **Floors in Certain Places Where Food Stuffs Are Prepared and Sold.**

Section 199. All floors of buildings used as fish markets, bakery shops, sausage factories, candy factories, and other places where food stuffs are prepared for sale, hereafter established shall be constructed of concrete or other fireproof material covered with a wearing surface of cement or asphaltum and carried up on all walls at least eight inches; or, if of wooden construction such floor shall be covered with waterproof material, the same to run up on the walls at least eight inches in height. Over this waterproof material shall be placed a wearing surface of concrete not less than two inches in thickness troweled to a smooth surface or of mastic not less than one inch in thick-

ness. Said wearing surface shall be carried up on walls to the top of the before mentioned waterproof material.

All floors of meat markets, butter shops, vegetable stores, delicatessen stores, restaurants and bakery stores, hereafter established, must be constructed of two layers of boards driven tight; and each layer not less than one inch in thickness; and between said two layers shall be placed galvanized iron cloth of not less than No. 20 gauge wire whose mesh is not more than one-half inch. Said cloth shall extend over the entire area of floor and up on all walls at least eight inches in height, and shall be covered by a baseboard nailed to said walls. (See also Ordinance No. 2917, New Series.)

### PART XIII.

#### GENERAL PROVISIONS.

##### Explanatory.

Section 200. The following general provisions shall apply to the construction of all buildings of all classes contemplated in this Ordinance unless specific exceptions or definite clauses under the various classes of buildings be made, in which case the said specific exceptions and definite clauses shall govern.

#### Communicating Openings in Exterior, Division and Party Walls. Fire Doors.

Section 201. Openings through exterior, division or party walls, except of frame buildings, whereby communication is made with an adjoining building or room, shall not exceed eight (8) feet in width, shall have standard fire doors constructed and arranged as hereinafter specified at each side of such openings, and not more than one (1) such opening shall be allowed in every fifty feet or portion thereof of said walls in any one story.

All such fire doors shall be closed at night, or when the building is closed down, and shall be automatically self-closing by the action of one (1) or more fusible links placed near the ceiling over each door.

**Standard Fire Door, Construction of.**

Section 202. All fire doors shall overlap the walls at least four (4) inches at sides and top. Sills shall be of metal at least one-quarter ( $\frac{1}{4}$ ) inch thick on masonry, or of masonry, and have horizontal faces extending under fire doors and outer edges flush with outer surface of fire doors.

Top of sliding doors shall conform to incline on the track, which shall be three-quarters ( $\frac{3}{4}$ ) inch to the foot. No door shall be hung on wooden frame or in contact with any woodwork.

Doors shall be made of three (3) thicknesses of seven-eighths ( $\frac{7}{8}$ ) inch by six (6) inch tongued and grooved redwood boards, surfaced both sides, the outer thicknesses to be vertical and the inner thickness to be horizontal, nailed with clinched nails.

Doors shall be entirely covered with good tin plate ("IC" charcoal, 109 lbs. to the box), not over fourteen (14) inches by twenty (20) inches in size, laid with locked joints covering nail heads, and all vertical seams shall be double locked. No solder shall be used.

All doors shall have hinges, hangers, latches and chaffing strips of wrought iron bolted to the doors, and shall have steel tracks and wrought iron stops and binders bolted through the wall. Swinging doors shall have wall eyes of wrought iron built into the wall.

**Standard Fire Shutters, When Required.**

Section 203. Every opening in any exterior masonry wall of any building over 25 feet, or two stories in height, except dwellings, churches, school houses, hotels, apartment houses, lodging houses, boarding houses, office buildings, municipal buildings, hospitals, asylums, convents and sanitariums, but including every opening in exterior masonry walls of every building where said opening faces on the lot line, lot line court, or on rear yard, which is within, or shall at any time come to be within 30 feet in any direction of any portion of another building; shall have standard fire shutters, or self-coiling, rolling corrugated steel shutters or doors.

Wired glass not less than  $\frac{1}{4}$  of an inch thick in metal sashes and frames shall be deemed an equivalent of and a substitute for fire shutters.

All doors and shutters opening upon fire escapes and at least one row vertically above the first story, shall be so arranged as to be readily opened from the outside by firemen, and those opening upon the first story shall have locks so arranged as to admit of easy destruction by the Fire Department. Rolling steel shutters above the first story shall not be locked or fastened on inside. All such shutters or doors shall be closed at night, or when the building is shut down.

#### **Standard Fire Shutters, Construction of.**

Section 204. Fire shutters shall overlap the outside of the wall at least 4 inches at top and sides, or be close-fitting against masonry work inside of opening, but shall not be hung on wooden frame or come in contact with any woodwork.

Shutters shall be made of two thicknesses of  $\frac{7}{8}$ -inch by 6-inch tongued and grooved redwood boards, surfaced both sides, crossed at right angles and nailed with clinched nails.

Shutters shall be entirely covered with good tin plate, "IC" charcoal, 109 pounds per box, in sheets not over 14 by 20 inches in size, laid with locked joints covering nail heads, and all vertical seams shall be double-locked. No solder shall be used.

Shutters shall be hung on substantial wrought iron pin or eye blocks built into the wall, and shall have wrought iron hinges, catches, and bars bolted to the shutter.

#### **Limiting Percentum of Lot Occupied by Building for Three or More Families.**

Section 205. No building which is intended or designed for, or used as a home or residence of three or more separate and distinct families or households, shall occupy more than ninety (90) percentum of a corner lot, or more than eighty (80) percentum of any other lot, provided that the space occupied by fire escapes, erected and constructed according to law, shall not be deemed a part of the lot occupied.

For the purpose of this section when a lot runs through from street to street, or from street to alley, one-half of the rear street or alley may be considered

as a portion of the lot to be left uncovered, provided that if said rear street or alley be more than twenty feet wide, only ten feet of the street or alley may be considered as a portion of the lot in computing the percentage to be left uncovered.

#### Opening in Rooms—Courts, Yards and Air Shafts.

Section 206. In all rooms in dwellings, houses, hospitals, schools, apartment houses, tenement houses and other buildings erected for the purpose of housing human beings there shall be at least one window opening upon a street or upon a court or yard which shall be open to the sky. Such window opening shall have at least ten square feet area and the sash must be arranged to open at least one-half the window area.

The above courts, if inner courts, shall have areas not less than the following:

	Sq. ft.
For courts one-story high .....	50
For courts two stories high.....	60
For courts three stories high.....	80
For courts four stories high.....	100
For courts five stories high.....	120
For courts six stories high .....	140
For courts seven stories high .....	160
For courts eight stories high .....	180

Lot line courts shall have areas not less than seventy-five (75) percentum of the above for the respective heights.

#### Ventilation of Water Closets, Etc.

Section 207. Air shafts ventilating compartments containing baths, water closets, urinals, slop or scullery sinks, shall be constructed according to the provisions of "The Plumbing Law" of the City and County of San Francisco.

#### Intakes for Inner Courts.

Section 208. In buildings which shall be intended or designed for, or used as, the home or residence of three or more separate and distinct families or households, every inner court including lot line courts shall be provided with one or more horizontal intakes of fireproof material at the bottom. Such intakes shall always

communicate directly with the street or yard and shall have a total area of not less than 9 square feet for each court. Such intakes shall have open grills of the full area required for intakes.

### Ground Floor Pipe Casings.

Section 209 (as amended Nov. 30, 1917). Every building already erected in said City and County except such as have been and now are equipped in compliance with the requirements of Section 209 of Ordinance No. 1008 (New Series), approved December 22, 1909, and every building hereafter erected in said City and County where the basement thereof is being used for the storage of goods or merchandise of any description shall be provided with ground floor pipe casing holes constructed in and through the floor of the first story of such building, extending down to and even with the basement ceiling or bottom of floor joists of such first story floor. Such ground floor pipe casing holes shall be constructed according to the plans therefor on file in the office of the Board of Public Works of the City and County and shall be located and of such number as may be determined upon by said Board of Public Works after a consultation held for the purpose with the Chief Engineer of said Fire Department, or Assistant Chiefs, or Battalion Chief thereof, such number to be one (1) to every nine hundred (900) square feet of floor surface or part thereof.

Section 210. No goods or merchandise of any description shall be stored in any such basement, in such manner as to interfere with the proper working of the water circulating nozzle used by said Fire Department, which will pass through any of such ground-floor pipe-casing holes; and no goods, merchandise or any other obstruction shall be placed over the cover of any such ground-floor pipe-casing holes, on the floor of the first story; and all such covers must at all times be kept clear of all obstructions, so as not to interfere with their prompt use by said Fire Department.

Section 211. The Board of Public Works shall notify the owners of all buildings now erected, where the basements are used for the storage of goods or merchandise of any description, to place such ground-floor

pipe-casings through the floor of the first story within thirty (30) days of said notice.

Section 212. No plans of any building hereafter to be erected shall be accepted or approved by the said Board of Public Works unless the plan of the first floor thereof over a basement which is to be used for storing goods or merchandise of any description shall show that ground-floor pipe-casing holes have been provided for which will permit the said Fire Department to put a water circulating nozzle through, and that the same are to be constructed according to the plans therefor on file in the office of the said Board of Public Works.

#### Access at Sidewalk to Water, Gas and Electric Services.

Section 213 (as amended Dec. 4, 1917). Every building except buildings occupied by one family only, or by two families and not over two stories high and having independent entrances, shall be provided with an enclosure or enclosures constructed of incombustible material located immediately within the curb of and beneath the sidewalk in front of said building. Access to such enclosure shall be afforded through an opening in its top, which opening shall have a suitable locked iron cover, set in the sidewalk. Fastenings to all such covers shall be identical and shall conform to sample in the office of the Chief of the Fire Department, and also at the office of the Chief Building Inspector of the Board of Public Works. Such enclosure shall contain a shut-off valve which shall relate to gas service only for such building and which shall be clearly tagged and marked. Where more than one lead goes into a building each gas pipe shall be equipped with the regulation shut-off valve.

#### Openings in Sidewalks.

Section 214. All openings hereafter constructed in sidewalks for sidewalk elevators shall be located in the outer half of the sidewalks, next to the curb. The outer edges of said openings shall be not more than 30 inches from the outer line of the curb.

The length of the sides of said openings parallel with the curb shall not exceed seven feet. The length of the sides of said openings at right angles to the curb shall

not exceed one-half the width of the sidewalk and in no case shall such length exceed five feet.

Openings in sidewalks for the admission of coal or light, or for manholes or for any other purpose, if placed outside the property line shall be covered with lens lights, set in iron or cement frames, or with iron covers having a rough surface and rabbeted flush with the sidewalk.

No plain surface of glass or iron more than four inches in diameter shall be placed in any sidewalk. When a cover is placed in any sidewalk, it shall be placed as near as practicable to the line of the curb, except for steps and area ways. All spaces under sidewalks shall be thoroughly ventilated.

All works supporting the sidewalk shall rest upon and be of incombustible material. (See also Ordinance No. 2189, New Series.)

### **Areas.**

Section 215. All areas set back from the street line shall be properly protected with suitable railings, or covered over; those on the sidewalk shall have iron doors, which shall be so made that when opened they will form guards.

When areas are covered over, iron or iron and glass combined, stone or other incombustible materials supported on brick, concrete or stone walls, or on iron or steel beams shall be used. Areas on sidewalks shall not exceed three (3) feet in width measured from the street line.

### **Floors in Yards, Etc.**

Section 216. All floors of yards, courts and passageways shall be of earth, sand, gravel, cinders or other similar material or of concrete. No such floors shall be constructed of wood.

### **Floor Lights.**

Section 217. Floor lights used for transmission of light to stories below shall be constructed of metal frames and bars or plates, and if any glass therein measures more than 16 square inches the glass shall be provided with a mesh of wire, either in the glass or under the same, and the floor lights shall be of the

same proportional strength as the floors in which they are placed.

### Stairs.

Section 218. In every building there shall be at least one stairway leading from all upper floors to the first or ground floor with access to the street; and there shall be at least one stairway from every basement to the ground floor.

Every building of more than 2,500 and less than 7,500 square feet area on the main or ground floor shall have one main stairway from the first to second floor, and above the second floor one stairway at least three (3) feet wide. In addition there shall be a second stairway above the second floor not less than two (2) feet wide; such stairway shall be removed as far as possible from the main stairway, but shall be accessible from the halls and shall extend to the top floor of the building.

In every building having an area of 7,500 or over and less than 10,000 square feet, said second stairway shall be at least 2 feet 6 inches in width and shall extend to the ground floor level and open to a street, alley or to a court having access to a street or alley.

In all buildings of 10,000 square feet or over in area on the main or ground floor one stairway shall be provided in addition to the two mentioned above, which shall be not less than three feet wide; a reasonable separation of the three stairways shall be required.

Every building having an area of 12,500 square feet or greater shall have at least one continuous stairway enclosed with suitable walls of brick, burnt clay blocks, reinforced concrete or such other fireproof materials and form of construction as may be approved by the Board of Public Works; said walls or construction shall be continuous and extend at least three feet above the roof. All doors opening in such stair hall enclosures shall be provided with self-closing fireproof doors and frames of metal and the sash and frames shall be of metal and glazed with wire glass. All such fireproofed stairways must have direct communication with a street or alley, through a passageway fireproofed as indicated for stair enclosures.

In every building a fire escape may take the place of one otherwise required stairway, provided said fire escape is connected directly to a public hallway or public space. The fire escape may take the place of a stairway beginning at the second floor level, not of a stairway required to ground level.

Stairways in Class "A" and Class "B" buildings shall be built of metal or reinforced concrete; stairways in Class "C" or frame buildings may be of metal or timber.

Marble treads, if used, shall have metal supports on all sides.

#### **Obstruction on Stairs.**

Section 219. Stairs or stairways passing from one floor to another in any building shall not be covered with a permanent flooring, but may be closed with a board partition extending from the floor to the ceiling, and provided with a door, which must be kept free from all obstruction at all times, so as to give to the Fire Department and Fire Patrol easy access from one floor to another, provided this section shall not apply to buildings used for public assemblages.

Goods or obstructions of any kind shall not be placed on the stairs of any building.

Explosives or inflammable compounds, or combustible materials, shall not be stored or placed under any stairway of any building, or used in any such place or manner as to obstruct or render egress hazardous in case of fire.

#### **Scuttles and Ladders.**

Section 220. All buildings over 25 feet high shall have permanent means of access to the roof from the inside, with ladders or stairs leading thereto and accessible to all occupants. The openings in the roof shall not be less than 24x36 inches, and when ladders are placed on the exterior of any building they shall be constructed of metal and bolted through the walls of said building at each story with not less than  $5\frac{1}{8}$ -inch bolts, with the nuts and washers to show on the outside of the building. Said ladders shall be placed not less than 8 inches from the walls of buildings, and shall

extend at least two feet above firewalls or roofs of buildings, and shall be securely fastened at top.

Size of metal for ladders 2 inches x  $\frac{3}{8}$  inches, 18 or more inches apart.

Size of rungs for ladders  $\frac{3}{4}$ -inch in diameter.

The braces carrying ladders shall be  $1\frac{1}{2}$  inches by  $\frac{1}{2}$  inch, bolted through the building.

Where the ladders join they shall be connected and bolted with not less than four bolts on each side.

Screws or lag screws shall not be used in the construction of said ladders.

In frame buildings where the studding does not correspond with the measurements for ladders, extra headers shall be inserted between the studding, of the same thickness as the studding and securely spiked.

#### Engineers' Stationary Ladders.

Section 221. Every building in which boilers are placed in the cellar or lower story shall have stationary iron ladders or stairs from such story leading directly to a manhole in the sidewalk or to inside exits.

#### Passages to Exits Required in Certain Buildings.

Section 222. All buildings used or occupied or constructed to be used or occupied as hospitals, asylums, seminaries, hotels, apartment houses, tenement houses, lodging houses, schools or work shops shall have on each floor a passage free and unobstructed, leading direct to each fire escape.

The following are exempt from the above requirement:

1.—All buildings of Class "A" and "B" construction.

2.—Apartment houses where every apartment has direct access to a fire escape, which either faces on a street, or from which there is a direct passage to the street.

3.—All buildings not exceeding in width thirty (30) feet outside measurement and not situated on a street corner.

The Board of Public Works shall determine the location of all passages and exits thereto necessary and adequate on all such buildings hereinbefore specified, so as to make the means of escape therefrom easy and

safe in case of fire or panic.

The minimum width of passages to exits shall be as follows:

To an exit on a buildings with a frontage of from thirty (30) feet to forty (40) feet, two (2) feet and six (6) inches wide.

To an exit on all buildings over forty (40) feet frontage, three (3) feet wide, provided, however, that the width of passages to exits shall be increased to from three (3) feet to four (4) feet six (6) inches, at the discretion of the Board of Public Works, in case of hospitals, asylums, large hotels and other buildings where more than the usual number of people congregate or are housed.

All buildings, if containing more than four (4) apartments or suites on any one floor, shall be provided with at least two (2) staircases, which shall be placed as far apart as circumstances will allow, but in no case shall said staircases be placed within thirty (30) feet of one another.

### **Exits for Frame, Lodging, Apartment and Tenement Houses, Hotels, Hospitals and Asylums.**

Section 223. Frame buildings used as lodging, apartment and tenement houses, hotels, hospitals, or asylums shall have on each floor open halls at least three feet and six inches wide, which shall lead to all fire escapes.

#### **Fire Escapes.**

Section 224. For the proper and necessary protection of life and property, all buildings hereinafter designated in this section and Ordinance, that are already erected and built or that may be hereafter erected and built in this City and County, shall be provided and equipped with fire escapes and stand pipes, as follows:

Every building that is occupied or so constructed as to be occupied by two or more families on the third story, not having proper and sufficient exits or facilities for escapes in case of fire, and every building of four or more stories in height, and every building used or occupied or so constructed as to be occupied as a theatre, hospital, tenement house, apartment house, lodging

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## FIRE ESCAPES

**Sidewalk Doors, Railings, Gratings, Grills  
Fences, Marquises, Store Fronts, Window  
Guards, Wirework, Elevator Enclosures,  
Elevator Cars, Folding Gates, Cast Iron  
and Wrought Iron Stairs, Lintels, Beams,  
Girders, Columns, Boiler Breechings, Steel  
Tanks, Conveyor Frames, Steel Sash, Etc.**

**1415-1437 HARRISON ST.**

Near TENTH STREET

San Francisco



See also Pages 35, 100 and 153

house, or for a factory, mill or manufactory or for offices, workshop or public entertainments or assemblages, above the second story, and every school building of more than two (2) stories in height, shall be provided and equipped with metallic fire escapes combined with suitable metallic balconies, platforms and railings firmly secured to the outer walls, and erected and arranged in such a way and in such proximity to one or more windows or to as many windows of each story above the first as may be necessary to make and render said fire escapes readily accessible, safe and adequate for the escape of the inmates in case of fire, and when placed on the rear or sides of buildings not adjoining a street they shall extend down to within 8 feet of the ground.

Said fire escapes shall extend from the level of the ceiling of the first story to and over the roof, and shall be either vertical metallic ladder fire escapes, metallic stair fire escapes, or other approved fire escapes. The Board of Public Works, after approval by the Fire Wardens, shall determine the kind, construction, location and number of fire escapes, necessary and adequate on all such buildings to make the means of escape therefrom easy and safe to the inmates in case of fire.

All fire escapes shall be erected and built as required by the provisions of section 225 of this Ordinance, and shall at all times be kept in good order and repair, and free from any and all obstructions.

Every building used as a hotel, lodging house, hospital, tenement house, apartment house, factory, mill or manufactory, shall be provided with a portable, metallic ladder of sufficient length to extend from second story balcony to sidewalk; said ladder to be hung from third story balcony when not in use.

#### **Specifications for the Erection and Construction of Fire Escapes.**

Section 225. Where a vertical metallic ladder is required, it shall be constructed according to the following requirements:

Size of metal for ladder,  $2 \times 3\frac{1}{2}$  inches.

Size of rungs for ladder,  $\frac{3}{4}$  inch diameter.

Size for grating bars for balconies,  $1\frac{1}{2} \times 5\text{-}16$  inches.

Size of cross-bearing bars, carrying grating,  $1\frac{1}{2} \times 3\frac{1}{8}$  inches.

The outside frames of all fire escapes carrying the gratings shall be 2-inch angle iron, shall extend all around the platform, and they must be bolted through the building.

The size of the bearing metal carrying platforms shall not be less than 2-inch channel iron, and the braces carrying the same shall be  $1\frac{1}{2} \times 1\frac{1}{2}$  inches, and must be bolted through the building.

The top rail of the balconies eight feet or less in length shall be  $1\frac{1}{2} \times 3\frac{1}{8}$  inches, balconies over eight (8) feet in length shall have in center one (1) extra rail of the same size as the top rail.

The trimmings for finishing outside rails shall be  $\frac{3}{4} \times 1\frac{1}{4}$  inch.

The height of railings of balconies shall not be less than two feet six inches, and the width of balconies not less than three feet.

All rails and bearing beams shall extend through the wall, or studding, and have washers and nuts on the same.

Where the vertical ladders join they shall be connected and bolted with not less than four bolts on each side.

Screws or lag screws shall not be used in the construction of fire escapes.

All balconies shall be constructed with circular corners.

All nuts shall show on outside of buildings.

Openings in balconies shall not be less than two (2) feet square.

Brackets carrying platforms shall not be more than five (5) feet apart.

Perpendicular ladders shall be at least eight (8) inches from the building.

Finishing on balconies shall not extend outside the rail.

Gratings on platforms shall be placed flat and the grating bars of all platforms shall not be more than one (1) inch apart, and in all cases be made of iron or steel.

All brackets carrying balconies shall be bolted through the entire walls or studding; the bolts shall not be less than seven-eights of an inch, and they shall have nuts and washers.

In frame buildings where the studding does not correspond with the measurements for balconies and ladders, extra headers shall be inserted between the studding and shall be of the same thickness of the studding, and securely spiked.

Where metallic stair fire escapes are required they shall be constructed according to the following requirements:

Balconies shall be placed upon buildings as the Board of Public Works may direct.

Where the brackets support the stairs or stair fire escapes the brackets shall be constructed of three-inch channel iron.

The platform of balconies shall be the same as required for vertical ladders, and shall be placed on the line of the top of the flooring of each story.

Said platforms shall be supported upon iron brackets, not more than five (5) feet apart, and shall in all cases be built into and anchored to the walls of masonry, during the construction of said walls, and shall go through the entire thickness of said walls, and must be securely fastened on the inside of the building.

The width of all balconies from the face of the wall out, shall not be less than three (3) feet six (6) inches, and the length of all balconies shall be regulated by the Board of Public Works.

In the floor or platform of all balconies there shall be an opening, not less than two feet wide, and three feet six inches long, enclosed and protected on three sides.

The railings and balconies shall be constructed as required for ladder fire escapes. There shall be a communication from balcony to balcony by means of inclined stairs, and no ladder will be allowed below the

line of the flooring of the uppermost story of any building.

Said stairs shall have an inclination from the perpendicular of not less than four inches to every twelve inches of rise, and shall be made of side stringers of not less than 4x $\frac{1}{4}$ -inch steel; treads must be turned down on ends, and riveted well into each stringer, at a distance apart of 16 inches for said inclination.

All such stairs must be provided with substantial railings of 1 $\frac{1}{4}$ -inch pipe; the sides shall be well supported by suitable standards of 1 $\frac{1}{4}$ -inch pipe, at proper distance, viz.: four standards to each run of steps, and thoroughly bolted to the stringers.

The ladders extending from the upper balconies to the roof may be perpendicular, but must be well braced with iron brackets.

### **Meter Rooms.**

Section 226. All buildings hereafter erected shall be provided for the accommodation of gas and electric service and meters, with recesses, enclosures, or openings not less than four (4) feet by four (4) feet in dimensions, and if a door leads thereto, said door shall be of dimensions not less than two (2) feet by four (4) feet, and shall have a ventilating screen at its top and bottom.

Suitable brackets or shelves shall be provided to support gas meters securely.

The electric service switches and meters shall not be installed in the same recess, enclosure or opening with a gas service and meter.

The aforesaid work shall be performed under the supervision and to the satisfaction of the Light and Water Inspector of the City and County.

### **Awnings, Shades and Balconies.**

Section 227. All awnings, shades and balconies shall be at least ten (10) feet above the line of the curb level and securely supported on wrought iron brackets built into the walls, and no part shall be less than ten (10) feet above the line of the curb level of the sidewalk, and a gutter shall thereon be formed to carry off the water to the line of the building and thence to the street gutter.

No gutters shall be required on cloth or canvas awnings or shades.

The height of all movable canvas or cloth awnings or shades shall not be less than  $7\frac{1}{2}$  feet above said curb level.

Awnings, shades and balconies shall not extend beyond the line of the curb, provided, however, that no awning, shade or balcony shall be erected on any building facing on any street, lane, alley or place which is twenty (20) feet or less in width; and no permanent awning, shade or balcony shall be constructed on any building within the fire limits unless the same be constructed of metal only or of metal and wire glass, and all cloth and canvas awnings shall be kept raised except where the sun shines on the spot to be protected by the same.

#### Rat-Proofing Basements.

Section 228. All buildings shall be made so as to be impervious as possible to the ingress of rats and other vermin.

The foundation walls shall be of concrete or of brick or of stone laid in cement mortar or of some equally rat-proof material, shall extend at least one foot above the surface soil, and shall be at least eight inches thick at the top; and where openings are necessary for ventilation or other purposes, said openings must be made rat-proof by suitable metal screens.

The full floor area under all buildings must be covered by concrete at least one and one-half inches thick, except where the surface of the soil is composed of rock; provided, however, that outside of the following described district, buildings occupying a ground space of not more than eight hundred square feet need not comply with the foregoing provision, provided that such buildings are elevated at least 18 inches above the surface of the ground and the walls supporting the buildings are left open upon three sides and the space under such buildings exposed.

The district to which the foregoing exception shall apply shall be all that portion of the City and County not included within the following boundaries: Com-

mencing at a point where Channel street intersects the waters of the Bay, thence along Channel street south to Division street, along Division street to Harrison street, along Harrison street to Army street, along Army street to Castro street, along Castro street to Seventeenth street, along Seventeenth street to Stanyan street, along Stanyan street to Fulton street along Fulton street to Thirteenth avenue, along Thirteenth avenue to the Presidio wall, along the Presidio wall to Lyon street and along Lyon street to the waters of the Bay and along the waters of the Bay to the point of commencement.

### **Protection in Walls Against Vermin and Fire.**

Section 228A. There shall be placed under the first floor plates in all exterior walls and interior supporting partitions, where wooden joists are used, a vermin and fireproof material, which shall extend the full width of the plate and for not less than two inches beyond the plate and underlapping the flooring. The same material is also to be placed around and close up to chimneys and pipes at first floor, and to underlap flooring not less than two inches. All shall be placed in such manner as will positively close up all openings and prevent the passage of vermin and fire draughts.

### **Bay Windows.**

Section 229. Bay, oriel and swell windows shall not be constructed in buildings of Class "A," Class "B" or Class "C" excepting at those corners or blocks whose enclosing sides form an angle of less than 90 degrees; provided, however, that windows of horizontal, circular or angular shape may be constructed in Class "A," Class "B" and Class "C" buildings which shall form bays in the thickness of the wall; provided further that no portion of the outside face of such windows shall project beyond or below the belt course or cornice over the first story of such building nor in any case project more than sixteen inches from the face of the wall of the building to the vertical face of such projection.

Such bay windows in Class "A" and Class "C" buildings shall have structural frames of steel channel or I beam uprights not less than four (4) inches in vertical

section, all joints and bearings with standard connections riveted, the uprights shall be properly connected together horizontally with steel channels, angles or tees below the sill and above the head of each window in each story and the whole steel frame thoroughly anchored to the brick walls in each opening, the outside finish of all such bay windows shall be of galvanized iron or other fireproof material.

In Class "B" buildings bay windows and lintels over same shall be constructed entirely of reinforced concrete.

Piers between bay, oriel or swell windows in brick, stone or concrete buildings shall not be less than four (4) feet in width, for buildings not more than three (3) stories in height; five (5) feet in width for buildings not more than five stories in height, and six (6) feet in width for buildings not more than six (6) stories in height and seven (7) feet in width for buildings not more than eight (8) stories in height.

The openings for bay, oriel or swell windows in brick, stone or concrete walls shall have steel beams of proper length to support the floors and loads; these beams must extend at least eight (8) inches into the wall at both sides of the openings.

#### **Bay Windows on Frame Buildings.**

Section 230. Bay, oriel or swell windows in frame or wooden buildings may project not more than thirty-six inches over the street line, measured to the finish; and not more than three (3) feet from the face of the building; they must not be more than ten (10) feet wide, measured from end to end, and the finish of their soffits must be at least ten (10) feet above the sidewalk, unless the window is entirely back of the street line.

Bay windows shall not be allowed to project over streets when said streets are less than thirty-five (35) feet wide.

#### **Skylights.**

Section 231. Skylights in buildings of Classes "A," "B" and "C."

All skylights in buildings of Class "A," Class "B" or Class "C" shall be self-supporting and the frames and

sashes thereof shall be constructed of metal and glazed only with wire glass not less than one-quarter of an inch thick.

Skylights in theatres shall be constructed according to the requirements of Section 178 of this Ordinance.

### **Skylights in Frame Buildings.**

Section 232. All skylights in frame buildings on roofs projecting at an angle less than twenty-two and one-half (22½) degrees, not enclosed by a substantial railing at least three (3) feet high shall be protected by screens of No. 10 wire with meshes not more than one and one-half (1½) inches square, which screens shall be secured to the sash and must be kept at least four (4) inches above the glass.

If skylights are glazed with wire glass not less than one-quarter (¼) inch thick, the wire screens may be omitted.

### **Cornices, Belts, Gutters and Pergolas.**

Section 233. All extension cornices, belts, gutters and other appendages on Class "A," Class "B" and Class "C" buildings shall be constructed of metal, stone, reinforced concrete or terra cotta.

All metal cornices shall be riveted and well secured to iron brackets not more than two feet apart, and properly built into the walls. Cornices of frame buildings may be of wood.

Gutters of metal may be formed in cornices. Proper leaders shall be provided for discharge of rain water from roof, but no leader shall discharge upon the sidewalk.

Stone and terra cotta cornices shall have every piece anchored to backing with heavy anchors, and where necessary supported on steel supports.

Appendages of Class "C" buildings, ventilators, erections on roofs, turrets, lantern lights, if not wholly fireproof within the fire limits, such as dormer windows, mouldings, eaves, parapets, balconies, bay windows, towers, spires, shall be enveloped with fireproof material, provided, however, that any of the said appendages which exceed the allowed limits of height of its class shall have its exterior wholly fireproof.

Appendages of frame buildings used as "pergolas" or "wind shelters," which exceed the allowed limit of height of said frame buildings, shall have such construction if not wholly of fireproof material enclosed with fireproof material; however, such construction on roofs shall not exceed thirty-three and one-third (33 1-3) per cent of the area of said roof, and the limit shall not exceed eight (8) feet from roof covering; and further, no roof or covering shall be permitted upon said "pergola" or "shelter" and the same, if enclosed above the height of three (3) feet shall be of glass only.

#### **Porches of Wood.**

Section 234. Porches of wood may be attached to buildings of Class "C" but not to buildings of Class "A" nor class "B," and shall be constructed without concealed spaces in any part, and without enclosures other than open rail or wire guard not over four (4) feet above floor, except as hereinafter specified. Said porches must not be placed higher than the fourth story of any building, nor project over the line of any street, lane, alley or place.

Enclosures on such porches shall not exceed seven (7) feet from floor to ceiling, and shall not, for a hotel or lodging house, exceed fifty (50) superficial feet of floor room, or for any other building exceed twenty-five (25) superficial feet of floor room, and shall be used only as water closets or privies.

Roofs of both porches and enclosures, also the entire exterior of enclosures shall be covered with tin in the manner specified in Sections 202 and 204 of this Ordinance for covering fireproof shutters and doors, or with corrugated iron nailed to stud frame without boarding.

#### **Roof Covering.**

Section 235. The supporting portion of all roofs shall be in accordance with the structural requirements of the building. Outside the fireproof roofing limits, as outlined in Section 4 of this Ordinance, roofs may be covered with shingles. Within the fireproof roofing limits the roofs of all classes of buildings hereafter erected shall be covered with either metal, slate, tile terra cotta, asbestos shingles, two layers of prepared

roofing, each layer weighing not less than thirty-five (35) pounds per one hundred square feet, or at least four layers of saturated roofing felt, each layer weighing not less than fourteen (14) pounds per one hundred square feet, provided that said two layers of prepared roofing, and said four layers of saturated roofing felt, shall be cemented together with asphaltum and then covered with a flowing coat of asphaltum, in which shall be imbedded clean screened gravel of sufficient quantity to thoroughly cover the surface, said gravel shall pass through a screen whose meshes do not exceed five-eights ( $\frac{5}{8}$ ) of an inch square and be rejected by a number six (No. 6) screen. Provided further that said four plies of said saturated felt shall be laid over a dry sheet of unsaturated felt on all roofs inside the fire limits as prescribed in Section 3 of this Ordinance, where wood sheathing is used. Or by three (3) layers of pure asbestos roofing, composed of two (2) saturated layers and one (1) unsaturated layer, all cemented together with asphaltum when laid each sheet separately on the building, and weighing not less than sixty (60) pounds to the one hundred (100) square feet; said three (3) layers of asbestos roofing to be laid on top of a sheet of unsaturated asbestos weighing not less than twenty-two (22) pounds to each one hundred (100) square feet of surface.

For roofs damaged to the extent of 40 per centum, see Section 4 of this Ordinance. The supports, rafters and all parts of roofs within the fireproof roofing limits, rising at any point to a height of more than twenty (20) feet from the top of masonry walls, shall be built of fireproof material.

#### **Mansard Roofs.**

Section 236. Mansard or other roofs of like character having a pitch of over sixty (60) degrees, placed upon any Class "C" building, shall be constructed only of an iron or steel frame, lathed with iron or steel on the inside and plastered or filled in with fireproof material not less than three (3) inches thick. The outside of such roofs shall be covered with metal, slate, tile, terra cotta, a 3-ply pure asbestos roofing as specified in Section 235, asbestos shingles or asbestos building lumber

not less than one-eighth ( $\frac{1}{8}$ ) of an inch in thickness.

No such mansard roof shall be so placed upon any building that any portion of such mansard roof shall be more than the allowed height from the ground level.

### Elevators.

Section 237. The strength of the ropes, gearing and all other portions of the mechanism of passenger elevators shall be calculated with a factor of safety of twenty figured from the actual static loads.

For all other elevators ten is to be used as the factor of safety; also figured from actual static loads.

The main suspension ropes or cables of all elevators used for passenger or freight must be noncombustible material.

Every elevator shall be provided with approved devices for preventing the car from falling in case of accident.

All freight elevator shafts must be provided at each floor through which they pass with latest and best appliances, style and design of automatic closing safety gates.

Doors opening into passenger elevator shafts shall be entirely under the control of the operator and shall be so arranged that they can be opened from the inside.

Elevator cabs shall be so covered with wire screens as to protect passengers from falling machinery. Every part of the elevator shaft shall be protected by a metal grill when not enclosed. At the top of the elevator shaft and directly under the machinery there shall be placed a fixed wire screen of sufficient strength to hold any falling machinery.

### SIDEWALK ELEVATORS.

Section 238 repealed by Ordinance No. 2189 (New Series), following:

### ORDINANCE NO. 2189 (New Series).

Approved February 19, 1913.

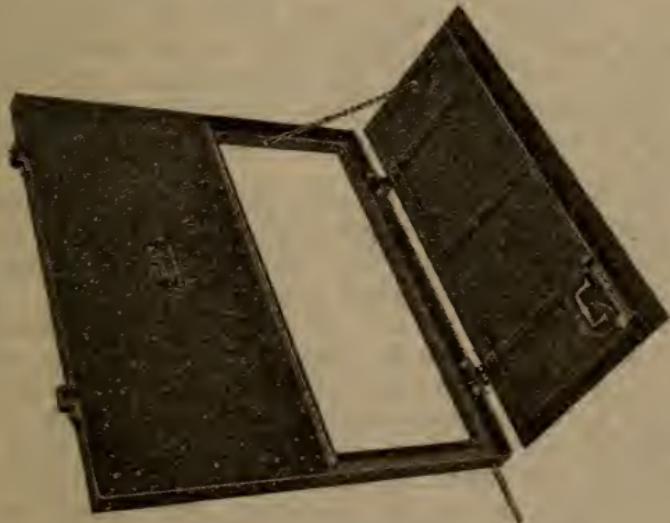
Regulating the Use, Operation and Construction of Sidewalk Elevators, Trap-Doors and Other Openings in Sidewalks, and Providing a Penalty for the Violation of the Provisions of this Ordinance.

Phones  
Market 730-731

Builders' Exchange  
San Francisco

# Michel & Pfeffer Iron Works

1415-1437 HARRISON STREET  
Near Tenth St. San Francisco



MANUFACTURERS OF

# Sidewalk Doors

See also Pages 35, 100 and 141

### Sidewalk Elevators.

Section 238. It shall be unlawful for any person, firm or corporation to construct, operate or use, or cause to be constructed, operated or used any sidewalk elevator unless the shafts or sidewalk openings of such sidewalk elevators, be covered with substantial iron doors, or iron gratings, as nearly flush with the upper surface of the sidewalk as will permit proper drainage, and unless such doors or gratings be provided with some mechanical device for locking and unlocking them which will not require any person to ride on such elevator for the purpose of locking or unlocking said doors or gratings.

It shall be unlawful for any person, firm or corporation to construct, operate or use, or cause to be constructed, operated or used any sidewalk elevator unless the same shall be equipped with some mechanical device which will prevent the platform of said elevator from approaching within less than five (5) feet of the sidewalk doors or gratings thereof when the said doors or gratings are closed.

It shall be unlawful for any person to open any sidewalk elevator doors or gratings unless he is directed or permitted by the person, firm or corporation using said elevator to open such doors or gratings. And it shall be unlawful for any person, firm or corporation operating or using such sidewalk elevator to open or cause to be opened the elevator doors or gratings thereof unless a responsible person connected with the person, firm or corporation operating or using said elevator shall be stationed on the sidewalk immediately adjacent to said doors or gratings, who shall lift said doors or gratings by hand, except that, if they are automatically lifted from below upon the raising of such elevator, before said doors or gratings are raised, removable metal guards, consisting of four metal posts, not less than three (3) feet in height, shall be inserted in sockets placed in the sidewalk at the four corners of such doors or gratings, with the tops of such posts connected by chains or bars, so that all sides of such openings shall be guarded, except that side next to curb, and the public protected from injury by the

sudden raising of such doors. Such metal guards shall be removed as soon as said doors or gratings are closed.

It shall be unlawful for any person, firm or corporation operating or using sidewalk elevators to keep the doors or gratings thereof open or permit the same to remain open except during the time necessary for the receiving or shipping of merchandise or supplies and unless during said time the said doors or gratings remain open suitable guards or railings are provided around the opening of the sidewalk to prevent accidents to the public, and unless a lighted lamp shall be maintained at openings when the doors or gratings thereof are open after dark.

It shall be unlawful for any person, firm or corporation to construct, operate or use, or cause to be constructed, operated, or used, any trap-door or opening whatsoever in any sidewalk, unless the same be equipped with removable metal guards, consisting of four metal posts, not less than three (3) feet in height, and which metal posts shall be inserted in sockets placed in the sidewalks at the four corners of such trap-door or opening, with the tops of such posts connected by chains or bars, so that all sides of such openings shall be guarded. Such metal guards shall be removed as soon as said trap-doors or openings are closed.

It shall be unlawful for any person, firm or corporation, operating or using trap doors or other openings in sidewalks to keep the doors, openings or gratings thereof open or permit the same to remain open except during the time necessary for the receiving or shipping of merchandise or supplies and unless during said time the said trap doors, openings or gratings remain open suitable guards or railings are provided around the opening of the sidewalk to prevent accidents to the public.

Any person, firm or corporation, violating any of the provisions of this Ordinance, shall be guilty of a misdemeanor, and, upon conviction, shall be punished by a fine not to exceed five hundred dollars, or by imprisonment in the County Jail for not exceeding six

months, or by both such fine and imprisonment.

#### **Stairway and Elevator Enclosures in Basements.**

Section 239. The bottom of every elevator and of every stairway leading to a basement shall be enclosed with a door and a tight partition extending from the basement floor to the underside of the first floor, which enclosure shall be of the construction required for a building of the class in which it is placed, and shall contain no glass except wire glass one-quarter inch thick in metal sash.

#### **Elevator Shafts and Hatchways.**

Section 240. Open elevators or elevators without fire-proof enclosures may be used in buildings of Classes "A" and "B." They may also be used in buildings of Class "C," provided they are located and operated in well holes of fireproof staircases (oak treads may be used); provided the staircases are entirely surrounded by walls, either of fireproof material or of studding covered on both sides with metal lath and plaster.

Open elevators may be used in all buildings provided they do not pass the ceiling of the first story.

Buildings occupied or used entirely for manufacturing or mercantile purposes may have open elevators with hanging enclosures around the openings at each floor, extending downward at least three feet and covered with metal on both sides from soffit of the hanging enclosures to the top of the floor above, and trap doors covered with metal on the underside at each floor.

Elevators, hoists, dumb waiters and lifts and all openings or shafts passing through the floor or floors in all buildings other than Classes "A" and "B," and under all other conditions, shall be enclosed by walls of noncombustible material, or of studding covered on both sides with iron, or with metal lath and plastering not less than three-quarters of an inch in thickness.

If the shafts of said elevators, hoists, dumb waiters and lifts pass the upper floor of any building they shall be carried through at least 18 inches above the lowest point of the roof adjacent, and they must be covered with a skylight; where roofs slope at an angle exceeding 20 degrees, flat skylights parallel with roof shall

be permitted, provided  $\frac{1}{4}$ -inch wired glass or protecting wire screens are used as provided in Sections 231 and 232 of this Ordinance.

If the shafts do not pass the upper floor their tops shall be covered with some noncombustible material.

All faces of doors opening into elevator shafts shall be of metal or covered with metal. The upper panel of any such door may be of wired glass  $\frac{1}{4}$  of an inch in thickness. Windows shall not exceed one for each floor, nor shall any window have a greater area than 24 square feet, except where said openings are in exterior walls and face a street, when they may by permission of the Board of Public Works be made larger. The frames, sashes and all woodwork shall be covered with metal, and sashes shall be glazed with wire glass  $\frac{1}{4}$  of an inch in thickness.

### **Barricades to be Erected During Construction.**

Section 241. During the construction or repair of buildings, as soon as the rough or temporary floor is laid, all shafts or openings, or wells, shall be provided with a railing four feet high around such openings, and in shafts where elevators or hoists are running a barricade at least six feet high shall be erected and maintained around such shafts.

### **Chimneys and Flues.**

Section 242. All chimneys and flues hereafter constructed, except as provided in Sections 244, 245 and 246 hereof referring to patent chimneys shall be of brick or stone or may be of concrete when in concrete walls; their enclosing walls shall be not less than four (4) inches thick, and shall, if less than eight (8) inches thick, be lined on the inside with well-burnt clay or terra cotta pipe not less than  $\frac{3}{4}$  of an inch thick for flue linings of the following inside dimensions: 3x7 inches 3x11 $\frac{1}{2}$  inches, 7x7 inches and 7x11 $\frac{1}{2}$  inches, and one inch thick for flue linings of the following inside dimensions: 2 $\frac{1}{2}$ x15 inches, 6 $\frac{1}{2}$ x15 inches, 11x11 inches, 11x15 inches and 15x15 inches. Said lining shall start from the bottom of the flue or the throat of a fireplace, be continuous to the top of the flue, and shall be built in first and bricked around as carried up. Flues where

lining is not required by this Ordinance shall have the joints struck smooth on the inside, and, if less than eight (8) inches thick, shall be smoothly plastered for the entire height on the outside.

No smoke flue shall be less than 7 by 7 inches in the clear, and such sized flue shall have but one inlet; for two inlets the flue shall be not less than 7 by 11½ inches in the clear; for three inlets not less than 6½ by 15 inches in the clear, and for a larger number of inlets the size shall be increased in same proportion. Flues larger than two hundred square inches and less than five hundred square inches area shall be surrounded by walls not less than eight inches thick; flues larger than five hundred and less than one thousand square inches area shall be surrounded by walls not less than twelve inches thick to a height of fifteen feet above the inlet, and eight inches thick the remaining height; flues larger than one thousand square inches shall be proportionately increased in size and shall be lined with fire brick for at least twenty feet above the inlet.

Bakery oven flues shall be not less than 12 by 12 inches in the clear and shall be surrounded by brick work not less than eight (8) inches thick.

The inside four inches of all boiler flues for boilers of over twenty-five horsepower shall be of firebrick, laid in fire mortar, for a distance of twenty-five feet in any direction from the source of heat.

Chimneys and stacks connected with steam boilers shall extend not less than ten feet above the woodwork of the roof, or any adjacent roof, and if sawdust, shavings or wood are burned, shall extend twenty feet above such roofs and be provided with a spark arrester. Spark arresters shall be placed upon all chimneys and stacks whenever the Board of Public Works deems it necessary for the safety of property.

Chimneys and flues from boilers, restaurants and hotel ranges, bakers' ovens and similar unusually hot flues, shall have the outside exposed throughout the height of the room in which connection therewith is made, and if plastered shall be plastered directly upon the bricks.

All chimneys having a greater flue area than two hundred and sixty (260) square inches shall be carried up at least ten feet above the highest point of the roof of the building of which they form a part, and ten feet above the highest point of any roof within fifty feet of such chimney.

Where a smoke pipe is to enter a chimney or flue a tile thimble not less than  $\frac{5}{8}$  of an inch thick shall be placed as construction progresses. Thimbles shall be surrounded by four inches of brickwork brought out flush with furring and shall extend to the face of the plastering and not be nearer than six inches to any wood, lath and plaster. No tile pipe shall be used as a smokepipe in connection with such thimbles.

Chimneys not part of a wall shall not be built upon any floor or beam of wood, but shall be built from the ground up and shall not increase in size from the foundation. No chimney shall be corbelled out more than eight inches from a wall and corbelling shall consist of at least five courses of brick, but no corbelling shall be more than four inches in twelve-inch walls. Offsets for reducing the size of chimneys shall not be greater than one inch to each course.

Flues in party walls shall not extend within four inches of the center of the wall, and joint flues in party walls shall be separated across the wall by an eight-inch width of brickwork for the entire length.

No joist or girder shall be supported on the walls of any chimney or flue, and no woodwork shall be placed nearer than two inches to the outside face of, or within seven inches of the inside of any smoke, air or other flue.

All wood joists shall be trimmed away at least two inches from any smoke, air or other flue; the trimmer beam shall not be less than eight inches from the inside of the flue, and four inches from the outside of a chimney breast; except that for smoke flues the brickwork of which is by this Ordinance required to be eight inches thick or more, the trimmer beam shall not be less than twelve inches from the inside of the flue.

Chimneys built outside of frame structures, or in

light wells thereof, shall be well anchored, at intervals of not less than ten feet to the stud walls.

All chimneys and flues shall be properly cleaned and all rubbish removed and same left smooth on the inside on completion of the building.

### Fireplaces.

Section 243. All fireplaces and chimney breasts where mantels are placed, except as provided for patent chimney fireplaces, whether intended for ordinary fireplaces or not, shall have trimmer arches to support the hearth; arches shall be of brick, stone, burnt clay or concrete, at least twenty inches wide measured from the face of the chimney breast and their length shall not be less than the width of the chimney breast. Wood centers shall be removed from under trimmer arches and no timber shall be placed under any fireplaces or hearths. Hearths shall be of brick, tile or stone.

Fireplaces shall have arched heads with an iron arch bar over the top of the opening and not less than  $\frac{1}{4} \times 2 \frac{1}{2}$  inches, turned up at the ends two inches in each side of a chimney breast, so as to make a perfect bond for arch.

All fireplace openings where furred with wood on face, shall be surrounded by a brick rim eight inches wide projecting four inches, bonded into the brick-work. The firebacks and jambs of all fireplaces shall not be less than eight inches thick, of solid masonry.

When a grate is set in a fireplace a lining of firebrick at least two inches thick shall be added to the fireback unless soapstone, tile or cast iron is used, and filled solidly behind with fireproof material. No mantel or other woodwork shall be exposed back of a summer piece; the ironwork of the summer piece shall be placed against the brick or stonework of the fireplace. No fireplace shall be closed with a wooden fireboard.

Open fireplaces shall have arched heads, which shall, whenever possible, extend to the back of the tile or marble facing.

### Patent Chimneys.

Section 244. In lieu of the brick or stone chimney, as hereinbefore provided, there may be erected a chimney known as a Patent Chimney, for which a United States patent has been issued, and which has been approved by the Board of Public Works.

Every corporation, co-partnership or individual engaged in conducting the business of constructing, erecting, installing or repairing brick, stone or patent chimneys or fireplaces in the City and County of San Francisco, shall appear in person or by duly authorized representative, at the office of the Board of Public Works, and shall register with the said Board of Public Works, the name and place of business in said City and County of said corporation, co-partnership or individual, and the person so appearing shall make and file with said Board of Public Works, his affidavit that such name and place of business, as thus registered are correctly stated. Upon filing of said affidavit said Board of Public Works shall forthwith issue to said corporation, co-partnership or individual a certificate of such registration, provided, that said certificate shall not be granted for more than the period of one fiscal year, or a portion thereof, in any case unexpired at the time of granting of the certificate. And no corporation, co-partnership or individual shall construct, install, erect or repair any patent chimney or fireplace connected with a patent chimney, unless such certificate of registration shall have first been issued to such corporation, co-partnership or individual.

No heater, stove or range wherein coal, gas or coal-oil or other fuel is consumed shall be used unless the same be connected with a brick, stone or patent chimney, except as provided for in Section 247 of the Building Ordinance.

Upon the completion of the erection or repair of any brick, stone or patent chimney or fireplace connected with a patent chimney, it shall be the duty of the corporation, co-partnership or individual who performed said work to notify the Board of Public Works of such completion, who shall at once cause the same to be in-

spected, and if found in compliance with this Ordinance shall make and deliver a certificate or report of such inspection to the corporation, co-partnership or individual that performed said work, which certificate or report shall specify whether or not said work has been performed in compliance with the provisions of this Ordinance, and if not in compliance therewith shall state wherein said work does not comply with the provisions of this Ordinance. It shall be the duty of the Board of Public Works to keep on file in its office a duplicate of said certificate or report which shall at all times be subject and readily accessible to the inspection of the public.

No patent chimney or fireplace connected with a patent chimney hereafter constructed, altered or repaired shall be used until a certificate or report has been made and filed by said Board of Public Works as aforesaid, certifying that said work has been done in compliance with the provisions of this Ordinance, nor shall any building hereafter constructed, wherein patent chimneys or fireplaces connected with patent chimneys, shall have been installed be plastered until such certificate or report shall have been made and filed.

All patent chimneys shall be built up from the floor on which they are used, and in no case shall a stove pipe enter the bottom of a patent chimney, and when erected on the inside of a building they shall rest on an iron plate not less than one-quarter of an inch in thickness covered by not less than eight inches of brick work, and shall contain a smokeproof opening near the bottom for cleaning purposes. Patent chimneys built on the inside of a building shall have an opening in the partition inclosing the chimney to permit the cleaning of same.

If a patent chimney be erected on the outside of a building, it shall rest on a substantial iron bracket, not less than  $\frac{1}{4}$  inch in thickness by  $1\frac{1}{4}$  inches in width, and fastened to a studding by two bolts, not less than 5-16 inch in thickness, and nuts, screws or lag screws shall not be allowed.

All patent chimneys shall be braced every five feet of their height by substantial iron bands securely

fastened to the frame or studding or cross-pieces of the building; which said bands shall not be less than  $\frac{1}{8}$  inch in thickness by  $\frac{7}{8}$  inch in width and so constructed that chimney does not come within one inch of any woodwork. In no case shall any patent chimney be suspended from any roof timber or floor beam. All joints must be cemented together with cement mortar and the bands covering the joint shall be made of No. 24 gauge galvanized iron, and to be riveted with not less than two rivets, and space between bands and terra cotta pipe to be filled with cement mortar to make them smoke and spark proof. Each band to have not less than three No. 24 gauge, galvanized iron lugs riveted thereto.

The covering or casing of all patent chimneys shall be of No. 24 gauge, galvanized iron, riveted together at the lengthwise joint with rivets not more than three inches apart, or may be seamed, and top and bottom of seams secured by rivets, and shall be ventilated by six holes not less than one inch in diameter, made close to the top of chimney above roof, also six holes not less than one-half inch in diameter near inlet. The base or starting point of galvanized iron casing or covering of patent chimney from fireplace shall have not less than eight (8) holes of not less than  $\frac{3}{4}$  inch in diameter, not less than three (3) inches from bottom of said starting point. The casing or covering shall be at least two inches from the inside of terra cotta pipe.

Where chimney passes through the roof the flange or roof collar to be of such capacity as to allow the casing of the patent chimney to pass through said roof collar or flange and to fit snugly. A short and tapering casing made to slip over outside casing of chimney and roof collar so that casing above roof will conform with size of casing or covering of chimney below roof collar.

No patent chimney shall be erected so that it will be less than one inch from all woodwork, and the openings in the roof and through each floor and ceiling through which it passes shall be closed around said chimney with an iron plate or other fireproof material.

All patent chimneys projecting through a pitch roof six (6) feet or more shall be braced with not less than

one iron rod or gas pipe not less than  $\frac{5}{8}$  inch in diameter and said chimney to be also tied with not less than two guide wires to roof.

All pipe used for patent chimneys shall be composed of pure calcined clay not less than one inch in thickness.

No patent chimney shall have more than one inlet except that patent chimneys used or designed as vents, for gas stoves, gas ranges, or gas heaters may have one terra cotta inlet, not over four inches in diameter, for each floor, provided that the sizes for patent chimneys with which such inlets are connected shall be as follows:

Chimneys three stories or less in height shall not be less than six (6) inches in diameter.

Chimneys four stories in height shall not be less than seven (7) inches in diameter.

Chimneys five stories in height shall not be less than eight (8) inches in diameter.

Chimneys six stories in height shall not be less than ten (10) inches in diameter.

Chimneys seven stories or over in height shall not be less than twelve (12) inches in diameter.

### **Inside Dimensions of Patent Chimneys.**

Section 245. The inside dimensions of patent chimneys shall be as follows:

For fireplaces not over 18 inches opening, 6 inches.

For fireplaces with openings in excess of 18 inches and not more than 21 inches, 7 inches.

For fireplaces with openings in excess of 21 inches and not more than 24 inches, 8 inches.

For fireplaces with openings in excess of 24 inches and not more than 30 inches, 10 inches.

For fireplaces with openings in excess of 30 inches and not more than 36 inches, 12 inches.

For fireplaces with openings in excess of 36 inches and not more than 48 inches, 12 inches.

For fireplaces with openings over 48 inches, 14 inches.

For ordinary stove flues, 6 inches.

For French range flues, 8 inches.

For furnace flues, not less than 8 inches.

No flues shall be smaller in diameter than the opening of the furnace with which it is connected.

### Patent Fireplaces.

Section 246. All fireplaces and all gas logs connected with patent chimneys must be set on an iron plate, not less than one-quarter of an inch in thickness and not less than three (3) feet nine (9) inches in length by three (3) feet in width, which shall be free from all holes, said iron plate in all cases shall extend at least eight inches under the back, jambs and hearth. Boards shall not be placed under the iron plate, which must rest on the floor joists. On top of the iron plate there shall be one (1) inch of concrete or cement mortar, then a course of brick, followed by the tiling or marble. The strength of the floor must not be impaired by the cutting out for the fire place. In lieu of resting on the floor joists, said iron plate may be suspended by wrought iron stirrups of sufficient strength to sustain the fireplace and patent chimney.

The brick jambs of every fireplace or grate opening shall be at least eight (8) inches wide, and the backs shall not be less than eight (8) inches thick, and where fire places come over one another on separate floors, the jamb of the lower fireplace shall be wide enough to carry the patent chimney far enough to one side of the jamb above so that the patent chimney will pass the upper fireplace in as straight a line as possible. Where bends are necessary in patented chimneys solid offsets shall be used.

Fireplaces shall have arched heads with an iron arch bar over the top of the opening, and not less than  $\frac{1}{4} \times 2\frac{1}{2}$  inches, turned up at the ends two inches in each side of chimney breast, so as to make a perfect bond for arch.

All fireplace openings where furred with wood on face shall be surrounded by a brick rim eight inches wide projecting four inches, bonded into brick work. The firebacks and jambs of all fireplaces shall not be less than eight inches thick, of solid masonry.

When a grate is set in a fireplace a lining of firebrick at least two inches thick shall be added to the fireback

unless soapstone, tile or cast iron is used, and filled solidly behind with fireproof material. No mantel or other woodwork shall be exposed back of a summer piece, the iron work of the summer piece shall be placed against the brick or stonework of the fireplace. No fireplace shall be closed with a wooden fireboard.

Open fireplaces shall have arched heads, which shall, whenever possible, extend to the back of the tile or marble facing. In no instance shall second-hand patent chimney material be used in the construction or erection of a patent chimney until the said material shall have been first inspected and approved by the Board of Public Works.

Every person, firm or corporation engaged in the business of erecting or installing patent chimneys in, on or about buildings or other structures in the City and County of San Francisco, shall pay a municipal license of one hundred and twenty-five dollars per annum; or as an option and in lieu of the payment of said license as herein recited, there may be paid to the Board of Public Works an inspection fee in the sum of fifty cents for each and every flue to be erected or installed in any building or structure. The said inspection fee is to be payable to the Board of Public Works at the time of obtaining a permit for the erection or installing of such patent chimney.

### **Electric Heaters.**

Section 246A. The provisions of Sections Nos. 244, 245 and 246 regulating and requiring chimneys, vents or flues shall not apply to the installation or maintenance of electric heaters or any apparatus or appliance whereby electricity is used for heating purposes.

### **Smokestacks.**

Section 247. Smokestacks shall be constructed of steel, brick, or reinforced concrete. If of steel the metal shall be not less than

$\frac{1}{8}$ -inch thick for diameter up to 36 inches.

3-16-inch thick for diameter 36 inches up to 54 inches.

$\frac{1}{4}$ -inch thick for diameter over 54 inches,

increasing towards the bottom as determined by the weight and lateral wind pressure. If of brick, they

shall be laid up in cement mortar and shall be 13 inches thick for the upper 60 feet and increasing by four inches in thickness for each subsequent 60 feet in height, and have an external batter of 1 in 30. If of reinforced concrete, built as outlined under Class "B" buildings, the thickness shall be one-half that required for brick. All breeching shall be of at least 3-16 metal, lined with firebrick or covered with 85 per cent carbonate of magnesia  $1\frac{1}{2}$  inch sectional block covering.

In buildings of Class "C" and frame or wooden buildings, smokestacks of iron or steel may be used in connection with boilers and coffee roasters, provided same are not nearer than twenty inches to any woodwork where passing through floors, ceilings, roofs or partitions, and are protected with a metal jacket twelve inches from the stack, extending above and not less than twelve inches below the joists and have some metal umbrella to cover the roof opening high enough above the same to permit a free vent. Any woodwork or enclosure of such stack within four feet thereof other than masonry or tile, shall be metal lathed and plastered or have equivalent protection. Such stacks on the outside of a building shall not be nearer than eighteen (18) inches to any unprotected woodwork or wood lath and plaster, or nearer than twelve inches to any woodwork or wood lath and plaster, protected with metal extending two feet on each side of such stack.

#### Chimney of Cupolas.

Section 248. Steel cupola chimneys of foundries shall extend at least ten feet above the highest point of any roof within a radius of fifty feet thereof, unless such cupola be placed within an enclosure composed of fireproof materials extending at least ten feet above the top of the cupola, and all exterior openings of such structure covered by a suitable screen to prevent the egress of sparks. No woodwork shall be placed within two feet of the cupola.

#### Height of Chimneys and Flues.

Section 249. All chimneys and flues shall extend at least four (4) feet above a flat roof and at least two

(2) feet and six (6) inches above the ridge of a peaked roof, and if rising above the roof to height equal to more than six (6) times their thickness shall be properly anchored.

If the Board of Public Works deems any chimney unsafe to any adjoining or adjacent building, said chimney shall be carried up four feet above the extreme height of said building, and if an extension of iron pipe is deemed unsafe by said Board, such extension shall be of brick or terra cotta pipe.

The owner or occupant of any building shall cause the chimneys thereof to be swept as often as may be required to keep clean.

### **Smoke Pipes — Not Permitted — To be Removed — In Floors and Partitions.**

Section 250. No smoke pipe, stove pipe, terra cotta pipe, earthen pipe, or other smoke flue, except as provided in this Ordinance, shall project through any external wall or window, or through the roof, or any skylight of any building, and all the above named pipes of any building now erected and for which the United States patent has not been issued, must be removed within thirty (30) days after the passage of this Ordinance.

No smoke flue shall pass through any wooden partition of any building unless there is a ventilated air space at least four (4) inches around the pipe. Any smoke pipe passing through the floor or floors of any building shall be protected by a metal casing, extending from the ceiling to at least one (1) foot above the floor, and there shall be a ventilated air space of at least four (4) inches around the said pipe.

### **Gas Grates, Gas Logs and Other Gas or Electrically Heated Appliances.**

Section 251. (a) No gas grate, gas log, or other appliance using gas or electricity for producing heat except as otherwise ordained, shall be placed in a fireplace or recess unless such fireplace or recess be constructed as required in Sections 243 and 246 of this Ordinance for fireplaces, the sides, back and top of

which shall be of brickwork not less than eight (8) inches thick; all pipes supplying gas thereto shall be of iron and enter only at the sides of fireplaces or recesses, through brickwork. Gas grates, gas logs, or other appliances using gas or electricity for producing heat, not placed in a fireplace or recess shall have a clear and unenclosed space of not less than ten (10) inches between them and any unprotected woodwork, wood lath and plaster or other combustible material, or a similar space of four (4) inches between them and any woodwork, wood lath and plaster, or other combustible material protected with terra cotta or tiles one inch thick or with metal with one (1) inch clear air space between the metal and woodwork, wood lath and plaster, or other combustible material.

No vent shall be permitted other than a brick or patent chimney constructed as required in Sections 242, 244, 245 and 246 of this Ordinance.

(b) No gas range, or gas water heater shall be placed nearer than twelve (12) inches to any unprotected woodwork, wood lath and plaster, or other combustible material or nearer than six (6) inches thereto if such woodwork, wood lath and plaster, or other combustible material is protected with metal with one (1) inch clear air space between the metal and the woodwork, wood lath and plaster or other combustible material. No gas range or gas water heater shall be placed in any recess unless the front of the recess is either open or freely vented at top and bottom.

(c) Every instantaneous gas water heater shall be provided with a vent pipe not less than three (3) inches in diameter, extending clear through and at least twelve (12) inches above the roof, with a "T" connection at the top; and around every such vent at all places not exposed there shall be a galvanized iron sleeve extending the full length of the concealed portion with a clear air space of not less than one (1) inch surrounding the vent. In every room fitted with an instantaneous gas water heater there shall be provided an air inlet independent of doors or windows.

(d) All low, portable gas stoves, gas plates, or heaters, shall be placed on iron stands or other incombustible

tible bases, or the burners shall be at least six (6) inches above the base of the stove and metal guard plates placed four (4) inches below the burners; all woodwork under them shall be covered with metal or other incombustible material. All portable gas heated stoves, ranges, kettles, gas plates or other gas heated devices, shall be connected direct to their gas supply main only by iron pipe or flexible metal tubing.

### **Portable Steam or Hot Water Radiators Wherein Gas or Electricity is Used for Producing Heat.**

Section 252. (a) Portable steam or hot water radiators wherein gas or electricity is used for producing heat, when installed in a fireplace or recess in any building, shall be installed as required for gas grates or gas logs in Subdivision "A" of Section 251 of this Ordinance.

(b) Portable steam or hot water radiators wherein gas or electricity is used for producing heat, when not installed in a fireplace or recess, shall have a brick wall of not less than eight (8) inches thick behind and extending at least eight (8) inches above and on each side of them, and between them and any woodwork, wood lath and plaster or other combustible material, and shall have under them a hearth of tile and cement not less than two (2) inches thick; or shall have a clear and unenclosed air space of not less than four (4) inches between them and any woodwork, wood lath and plaster or other combustible material, protected by metal, with one (1) inch clear air space between the metal and the woodwork, wood lath and plaster or other combustible material; or shall have a clear and unenclosed air space of not less than eight (8) inches between them and any woodwork, wood lath and plaster or other combustible material not so protected, and shall have under them a hearth of tile and cement not less than two (2) inches thick.

(c) All steam or hot water radiators shall be of cast metal and shall stand a hydraulic pressure of at least one hundred (100) pounds to the square inch, and shall be equipped with an automatic safety valve of a standard pattern, approved by the Fire Marshal, and set to blow off at twenty (20) pounds pressure or less.

(d) Gas grates, gas logs, hot air furnaces or heaters, or other appliances wherein gas or electricity is used for producing heat, when provided with a double back of metal with air space between of at least one and one-half (1½) inches and connected with conduit of at least three (3) inches in diameter from external atmosphere, whereby air may have a free and uninterrupted passage from the outside of house to burner to support combustion, and through said air space and into room, may be installed without a flue, chimney or other vent as follows:

Each said grate, log, furnace, heater or other appliance shall have a brick wall not less than eight (8) inches thick behind and extending at least eight (8) inches above and on each side and between it and any woodwork, wood lath, plaster or other combustible material, or shall have a clear and unenclosed space of not less than four (4) inches between it and any woodwork, wood lath, plaster or other combustible material, protected by metal with one (1) inch clear space between the metal and the woodwork, wood lath, plaster or other combustible material, or shall have a clear and unenclosed space of not less than six (6) inches between it and any woodwork, wood lath, plaster or other combustible material not so protected, and shall have under it a hearth of tile, cement or other noncombustible material, or shall be supported on legs of a noncombustible material, provided that there shall be a clear space between it and the floor or ground of five (5) inches.

#### **BILL NO. 4491. ORDINANCE NO. 4147.**

Section 252A. Gas grates or gas logs shall not be placed in any building elsewhere than in a fireplace constructed as described in this Ordinance or in a recess constructed with not less than four-inch back, breasts, top and bottom of solid masonry. If placed in a fireplace they shall be connected to a brick or terra cotta chimney. If placed in a recess they shall be vented with a terra cotta vent as prescribed in this Ordinance or connected to a chimney. And it is further provided that any gas appliance other than a gas grate

or gas log recessed in or attached to the wall or partition of any building or room, where such gas appliance is intended to be used for heating the building or room, shall be installed as provided for gas logs or gas grates. Except that in the case of gas appliances used for heating the building or room, if the flame is enclosed in a cast iron box in lieu of the masonry backing required in this section a ventilating space of not less than 1 inch in thickness may be used. Such ventilated air space shall be built of No. 24 galvanized iron and set not less than 1 inch from all woodwork.

And further provided in the case of heating appliances which use an illuminating flame and are directly connected with the outside air by not less than a 3-inch air intake the cast iron fire box and vent herein required may be omitted. And it is absolutely prohibited to use any type of Bunsen flame in any heating appliance except as hereinbefore provided.

The use of gas burners, gas registers, auxiliary gas heaters when located in the floor of any building or room or outside the fire pot of any heating furnace when used for heating any building or room are hereby prohibited if the products of combustion are allowed to escape into the room except where an illuminating flame is used. All such heating devices shall be installed as provided for gas grates.

No gas water heater or gas water boiler shall be placed in any recess unless the front of the recess is either open or freely vented at the top and bottom; such recess shall be completely lined with metal lath and plaster or asbestos covered with galvanized iron and shall have not less than six (6) inches clearance all around said heater. In every room provided with gas appliances there shall be provided an air inlet independent of doors and windows.

Section 252B (as adopted Oct. 26, 1917). The provisions of Sections Nos. 244, 245 and 256 regulating and requiring chimneys, vents and flues shall not apply to the installation or maintenance of gas heat radiators, standing on the floor not less than five inches from any wooden or plaster wall.

Section 2. All gas heat radiators shall be connected to a brick or patent chimney or to a terra cotta flue of not less than 6 square inches in the clear, the walls of such flues to be not less than  $\frac{1}{2}$  inch in thickness and the joints to be made of galvanized iron sleeve not less than three inches wide with edges flanged outward at least  $\frac{1}{2}$  inch and the joints to be filled with cement; the entire flue encased in galvanized iron similar to the so-called patent flue with  $\frac{1}{2}$ -inch air space all around between terra cotta and casing. This patent flue to be so sized that not less than six square inches in the clear will be permitted for four radiators or less, and in cases where more than four radiators are to be connected into the same flue the area is to be increased proportionally, said patent flue in all cases to extend to the outside and at least two feet above the roof of the building.

Section 253. From and after the passage of this section as herein amended, all steam boilers, heating furnaces and water heating apparatus using any fuel other than gas, shall be enclosed in a room with walls constructed of masonry, terra cotta or tile from the floor to the bottom of the floor joists above; the ceiling shall be of the same construction, or of not less than one (1) inch plaster on metal lath. All swinging doors shall be arranged to swing out and to close automatically. Sliding doors shall overlap the wall at least four (4) inches at sides and top. Sills shall be of metal or masonry. Floor shall be of concrete. Where oil is burned for fuel, every doorway shall have a brick or concrete sill rising not less than seven (7) inches from the floor. All doors shall be covered on both sides with galvanized iron. All windows shall be of wired glass not less than one-quarter ( $\frac{1}{4}$ ) inch thick set in metal frames or wood frames covered with galvanized iron. Approved Dec. 12, 1917.

#### Erection of Steam Boilers, Furnaces, Etc.

Section 254. Boilers exceeding 10 H. P., used for generating steam for heating or motive power, and large furnaces, shall not be placed on any floor above the cellar of any building, unless the same are set on metal

beams and arches and such beams shall be built into the walls. Every steam boiler shall be provided with a tank or other receptacle of sufficient capacity to hold at least a sufficient supply of water to last six (6) hours.

Whenever steam boilers, water heaters, large cooking ranges, furnaces, candy kettles, laundry stoves set in brick, or other structures in which fire is maintained, are set on any wooden floor, such floor shall be protected by a continuous sheet metal bearing plate not less than 3-16 of an inch thick, all joints of which shall be securely rivited, and the top of such plate shall be covered with not less than seven (7) inches of brick or concrete.

### Heating Furnaces.

Section 255. The top of all heating furnaces set in brick shall be covered with brick supported by iron bars, so constructed as to be perfectly tight; said covering shall be in addition to and not less than six (6) inches from the ordinary covering of the hot air chamber. Smoke pipes and furnaces not set in brick shall be at least two feet from any unprotected woodwork. If said smoke pipes and furnaces are less than two feet from any woodwork, said woodwork must be protected by sheets of tin plate in such manner that an air space of at least two inches will be formed between the woodwork and the tin plate, which shall extend one (1) foot beyond the furnace on all sides.

### Ranges and Stoves.

Section 256. The backs of all ranges, candy furnaces and kettles, if set in brick and built against any frame partitions or frame wall, shall be not less than eight (8) inches thick, and shall be extended with brick or hollow tile not less than two (2) inches thick to a height of two (2) feet above the top of furnaces or kettles. In no case shall any range, candy furnace or kettle set in brick against a brick wall, with any combustible material between it and the wall, or upon said wall for a height of two (2) feet above the top of such range, candy furnace or kettle.

All wood and lath and plaster, or wooden ceilings

over all ranges in hotels, restaurants and boarding houses shall be guarded by metal hoods, placed at least nine (9) inches below the ceiling, or shall be metal lined on walls and ceiling back of and above the range. All ventilating pipes connected with the hood over a range shall be at least nine (9) inches from any wood lath and plaster, or combustible material, or such pipes shall be covered with one (1) inch of asbestos on wire mesh, and shall not pass through any floor. Stoves shall be kept twenty (20) inches and smoke pipes twelve (12) inches from any wood lath and plaster, or woodwork, and shall be protected with a metal shield arranged with at least one (1) inch air space behind such shield.

### Hot Air Boxes.

Section 257. All hot air boxes hereafter placed in the floors or partitions of buildings, except when such are entirely of incombustible material, shall be made of double pipes of tin plate, which shall not be less than one-half inch apart and set in soapstone or equally fireproof borders, not less than two (2) inches in width, to which the pipes shall be tightly jointed by inserting the same into a groove, or the pipes and boxes shall be covered with asbestos one-sixteenth (1-16) of an inch in thickness cemented thereon.

Hot air boxes of pipes less than ten (10) inches by twelve (12) inches in size shall be kept at least half ( $\frac{1}{2}$ ) an inch from any woodwork; those of greater size shall be kept at least one (1) inch from any woodwork. No woodwork shall be placed within one (1) inch of any metal pipe intended to convey steam or heated air, unless such pipe is protected by a facing of metal, soapstone or earthen ring; provided, that no covering, except it be of incombustible material, shall be placed within one (1) inch of the outer surface of any steam pipe.

Ventilating ducts for cold air may be made of galvanized iron, provided they are entirely enclosed with partitions constructed as required in the different classes of buildings. When said ducts pass through roof they shall have protecting hoods to keep out rain.

### Registers.

Section 258. Registers located over a brick furnace shall be supported by a brick shaft, built up from the cover of the hot air chamber; said shaft shall be lined with metal pipe and all wood beams shall be trimmed away not less than four (4) inches from it. Where a register is placed on any woodwork in connection with a metal pipe or duct, the end of said pipe or duct shall be flanged over on the woodwork only, under it. All registers for hot air furnaces placed in any woodwork or combustible floor shall have stone or iron borders, firmly set in plaster of Paris, or gauged mortar. All register boxes shall be made of tin plate or galvanized iron, with a flange on top to fit the groove in the frame, and the register must rest upon the same. There shall be an open space of two (2) inches on all sides of the register box, extending from the under side of the border through the ceiling below. The said opening shall be fitted with a tight tin, or galvanized iron casing, the upper end of which shall be turned under the frame. When a register box is placed in the floor, over a portable furnace, the open space on all sides of the register box shall not be less than three (3) inches. When only one (1) register is connected with a furnace, said register shall have no valve.

### Steam and Hot Water Heating Pipes.

Section 259. Steam or hot water heating pipes shall not be placed within two (2) inches of any timber or woodwork, unless the timber is protected by a metal shield, when the distance shall not be less than one (1) inch. All steam or hot water heating pipes, passing through floors and ceilings or lath and plaster partitions, shall be protected by a metal tube one (1) inch larger in diameter than the pipe, having a metal cap at the floor and where they run in a horizontal direction between the floor and ceiling a metal shield shall be placed on the under side of the floor over them, and on the sides of beams running parallel with said pipe.

All wood boxes or casings enclosing steam or hot water heating pipes, and all wood covers to recesses in walls, in which steam or hot water heating pipes are

placed, shall be lined with metal. All pipes or ducts used to convey air warmed by steam or hot water shall be made of metal or other fireproof material. All steam and hot water pipe coverings shall consist of fireproof materials only.

### **Drying Rooms.**

Section 260. Dry rooms, dry boxes and all enclosures used for drying by artificial heat, must be plastered upon metal lathing and have the floor of bottom covered with incombustible material or in lieu thereof may be lined throughout with tin and asbestos not less than  $\frac{1}{8}$  inch in thickness, or other approved incombustible material. If such dry rooms, dry boxes or enclosures used for drying contain steam or other heated pipes, stoves or other heaters so arranged as to permit inflammable material to come in contact therewith, a metal netting of sufficient fineness must be so placed as to prevent such contact.

### **Notice as to Heating Apparatus.**

Section 261. In cases where hot water, steam, hot air or other heating plants are to be hereafter placed in any building, or flues or fireplaces are to be changed or enlarged, due notice shall first be given to the Board of Public Works by the person or persons placing the said plants, in said buildings, or by the contractor or superintendent of said work.

### **Fire Department or Dry Standpipes.**

Section 262. Every building of four (4) or more stories in height shall have, inside or outside of its exterior walls (if over 16 stories standpipes must be inside), one or more metal standpipes, which shall extend from four (4) feet above the sidewalk to and over the roof and rest on the firewalls. Every standpipe shall have a Siamese inlet attached four (4) feet above the sidewalk, branches at each story, and a Siamese outlet on the roof. All inlets, branches and outlets to be of not less than three (3) inches interior diameter and to have caps and chains, and all branches and outlets to have three (3) inch gate valves. Standpipes shall conform to the following table:

	Interior Diameter.	Sidewalk Inlets.	Roof Outlets.
4-story building .....	4 inches	2-way	2-way
5-story building .....	4 inches	3-way	3-way
6 to 15-story buildings .....	5 inches	Siamese	Siamese
16 or more story buildings..	6 inches	4-way	3-way
		Siamese	Siamese
		6-way	4-way
		Siamese	Siamese

All iron or steel material used in the construction and erection of standpipes shall be galvanized after being fitted to, and before being permanently placed in, the building, and shall be kept in good order and repair and free from obstructions. Standpipes shall be of such strength as will withstand a pressure of 300 pounds per square inch.

#### **Standpipes and Fire Escapes: Location and Inspection of.**

Section 263. The Board of Public Works and Fire Wardens are hereby given the power to locate and inspect said standpipes and fire escapes, to see that same are properly constructed and located as in this Ordinance prescribed, and the Fire Warden shall furnish the owner a certificate when the work is satisfactory.

#### **Inside or Wet Standpipes for Hose Reels.**

Section 264. In every building exceeding 58 feet in height, and not over 104 feet, there shall be a vertical standpipe not less than 3 inches interior diameter. In every building exceeding 104 feet in height there shall be a vertical standpipe not less than 4 inches interior diameter. Such standpipes shall be located in halls near stairways, or near stairways if building has no halls, and shall be of wrought iron or steel, and together with fittings and connection shall be galvanized, and shall be of such strength as to safely withstand at least 300 pounds square inch water pressure when ready for service.

In buildings exceeding 100 feet frontage on two or more streets, or whose area exceeds 10,000 square feet

there shall be two such standpipes, near separate stairways, if possible.

Said "Inside or Wet Standpipes for Hose Reels" shall be additional to the Fire Department standpipes required by Section 262 of this Ordinance. They shall be connected to water mains, tanks or pumps as herein-after provided, with pressure on at all times; and if connected to a tank capable of holding 5,000 or more gallons of water, shall have an extension of equal diameter leading to a point outside of the building or premises designated by the Chief of Fire Department, and provided with a three-inch gate valve with a cap and chain. (See Ordinance No. 223.)

Standpipes shall extend from the cellar to and through the roof, with a hose connection located from 5 feet 6 inches to 6 feet above the floor level, fitted with approved straightway composition gate valve in each story, including cellar, and a hose connection provided above the roof with the valve controlling latter located in the standpipe under roof and arranged to be operated both from above and below roof. A suitable three-quarter inch drain pipe and valve shall be provided under the roof for each roof connection.

When more than one such standpipe is required in a building, they shall be connected at their bases by pipes of size equal to that of largest standpipe so that water from any source will supply all the standpipes.

#### Water Supplies.

Section 265. In buildings not exceeding 104 feet in height the water supply to wet standpipes shall be from city water where pressure is sufficient, from an automatic fire pump of 500 gallons or more capacity per minute, or from an elevated tank or a steel pressure tank conforming to the following table:

Ground floor area of building.	Capacity of tank
Over 4,000 square feet.....	5,000 gallons
3,000 to 4,000 square feet.....	3,000 " "
2,000 to 3,000 square feet.....	2,500 " "
Less than 2,000 square feet.....	2,000 " "

In buildings exceeding 104 feet in height the water supply to wet standpipes shall be from an automatic fire pump of 500 gallons or more capacity per minute, drafting from a supply approved by the Chief of the Fire Department. When a wet standpipe is connected to a tank there shall be a straightway check valve in a horizontal section of pipe between the first hose outlet in connecting pipe and tank, and said tank must be filled by a separate pipe and not through the standpipe.

### Tanks.

Section 266. Tanks containing more than five hundred (500) gallons of water or other fluid placed on the roof or above the roof of any Class A, B or C building shall be supported on iron or steel beams of sufficient strength to safely carry the same, and the beams shall rest at both their ends on brick walls, or on iron or steel girders or iron or steel columns fireproofed as in Class A buildings, or piers of masonry. Underneath such tanks or on the side near the bottom thereof, shall be a short pipe or outlet, not less than four (4) inches in diameter, fitted with a suitable valve having a lever or wheel handle to same, so that firemen or others can readily discharge the weight of the fluid contents from the tank in case of necessity.

Covers on top of water tanks placed on roofs, if of wood, shall be covered with metal.

Tank towers erected within the fire limits shall be constructed entirely of non-combustible materials.

### Location of Pumps and Boilers; Hose.

Section 267. Where pumps constitute a supply to wet standpipes are located in the lowest story of a building they shall be placed not less than two feet above the floor level, and boilers upon which pumps depend for steam shall be arranged so that flooding of fires under same will be impossible.

Hose sufficient to reach all parts of the floor shall be attached to each wet standpipe outlet in the building, and hose for roof hydrant may be placed on rack on top floor near the scuttle leading to the roof. Hose shall be 1½ inches inside diameter, in 50-foot lengths, and provided with standard couplings (with lugs) at each end,

all couplings to be of same hose thread as that in use by the Fire Department.

Hose shall be approved cotton rubber-lined made under specifications recommended by the National Board of Fire Underwriters.

Each line of hose shall be provided with washers at both ends and be fitted with play pipe or nozzle of Underwriter pattern, having handles at the base and with discharge outlet not less than five-eights of an inch in diameter. One spanner shall be located at each hose connection throughout the building.

#### **Elevator Service.**

Section 268. In every building exceeding one hundred feet in height at least one passenger elevator shall be kept in readiness for immediate use by the Fire Department during all hours of the day and night, including holidays and Sundays.

#### **Auxiliary Fire Appliances.**

Section 269. All existing buildings and those hereafter erected exceeding one hundred feet in height shall be provided with such auxiliary fire apparatus and appliances as wrenches, spanners, fire extinguishers, hooks, axes and pails as may be required by the Chief of the Fire Department; all of said apparatus to conform in design to those in use by the Fire Department.

Sections 270 to 281, inclusive, repealed by Ordinance 2350 (New Series). Approved July 3, 1913.

### **TEMPORARY SIDEWALKS AND FENCES IN FRONT OF BUILDINGS IN COURSE OF CONSTRUCTION.**

#### **Sidewalks and Fences.**

Section 282. It shall be unlawful for any person, firm or corporation to erect or cause to be erected, or to continue the erection of any building within the fire limits, or to cover the same with mastic or other coating of mortar, without first laying or causing to be laid, on half of the width of the sidewalk, a temporary or permanent sidewalk for the use of pedestrians, and without first erecting or causing to be erected a good and substantial fence, at least ten (10) feet high, inclosing the

sidewalk, so as to protect pedestrians from brick, timber, mortar or debris falling from such building. Such sidewalk must be so constructed, and all building operations must be so conducted that pedestrians shall have a free and unobstructed passage over at least the one-half of the official width of the sidewalk. No temporary sidewalk raised above or built beneath the official sidewalk grade shall be maintained or permitted to stand for a greater period than thirty (30) days from the date of the granting of the permit.

### Protection of Pedestrians.

Section 283. Whenever buildings shall be erected or increased to over two stories in height, upon or along any street, the owner, builder, or contractor constructing or repairing such building, shall have erected and maintained during such construction or repair a shed which shall extend over one-half of the sidewalk, which shed must be properly, strongly and tightly constructed so as to protect pedestrians and others using such streets. Whenever outside scaffolds are required to carry on the construction of buildings over eighty-six feet in height, whether the same be constructed by poles or thrust-out scaffold, there shall be erected on its outer edge and ends an enclosure of wire netting of not over one-inch mesh, or of boards not less than three-fourths of an inch thick, placed not over one inch apart, well secured to uprights not less than two inches by four inches, fastened to planks or timbers, and resting on put-logs or thrust-outs. The said enclosure shall be carried up at least five feet above the level on which the workmen employed on said scaffold are working. The said thrust-outs shall be not less than three by ten spruce or pine, and shall be doubled or tripled as may be required for the load to be carried, and they must be thoroughly braced and secured; or said timbers may be in one stick, if proportioned to the load. The flooring on thrust-outs and put-logs shall be tightly constructed with plank. If the walls of such buildings are carried up to two stories or more above the roofs of adjoining buildings proper means shall be provided and used for the protection of skylights and roofs of such adjoining buildings.

The protection over skylights shall be of stout wire netting, not over three-fourths inch mesh, properly secured on stout timbers. All such sheds and enclosures shall be subject to the inspection of the Board of Public Works. Should the owners, tenants or lessee of said adjoining building refuse to grant permission to have said roofs and skylights so protected, such refusal shall relieve the owner of the building in course of construction of any responsibility for damage done to the persons or property on or within the premises affected.

#### Temporary Floors.

Section 284. Temporary floors. (a) Any building more than two stories high in the course of construction shall have the joists, beams or girders of each and every floor below the floor or level where any work is being done, or about to be done, covered with flooring laid close together, or with such other suitable material to protect workmen engaged in such building from falling through joists or girders, and from falling planks, bricks, rivets, tools or any other substance whereby life and limb are endangered.

(b) Such flooring shall not be removed until the same is replaced by the permanent flooring in such building.

(c) It shall be the duty of the general contractor having charge of the erection of such building to provide for the flooring as herein required, or to make such arrangements as may be necessary with sub-contractors in order that the provisions of this Ordinance may be carried out.

(d) It shall be the duty of the owner or the agent of the owner of such building to see that the general contractor or sub-contractor carry out the provisions of this Ordinance.

(e) Should the general contractor or sub-contractors of such building fail to provide for the flooring of such building, as herein provided, then it shall be the duty of the owner or the agent of the owner of such building to see that the provisions of this Ordinance are carried out.

## THE CONSTRUCTION OF SCAFFOLDS.

### Permit for Scaffolds.

Section 285. It shall be unlawful for any person, firm or corporation to erect, build or maintain, or cause to be erected, built or maintained, over or upon any building, any scaffolding without first obtaining the written permission of the Board of Public Works, which permit shall state fully for what purpose said scaffolding is to be erected and used, and such scaffolding shall not be used for any purpose other than that designated in such permit. A general permit for the construction of a building shall carry with it the right to construct scaffolds.

### Safety of Scaffolds.

Section 286. It shall be unlawful for any person, firm or corporation to erect, maintain, suspend, swing or use or cause to be erected, maintained, suspended, swung or used, any scaffold or staging, unless the same be of sufficient strength to support the weight placed thereon and of sufficient width to prevent any person working thereon or any materials placed thereon from falling.

It shall be unlawful for any person, firm or corporation to swing or suspend or cause to be swung or suspended, from any overhead support or supports, any staging or scaffolding, more than twenty (20) feet above the ground or floor, unless the same shall have when in use a safety rail, rising at least thirty-four (34) inches above the level, and extending along the outer edge and across the ends of such staging or scaffolding, and unless the same shall be provided with braces sufficient to sustain the weight of a man's body, and to prevent said staging or scaffolding from swaying from the building or structure from which it is suspended.

### Temporary Staging on Roofs.

Section 287. No temporary staging of any kind nor stand for observation purposes shall be constructed of wood upon the roof of any building.

### Preparation of Mortar or Concrete—Where Prohibited.

Section 288. It shall be unlawful for any person, firm or corporation to place or cause to be placed or maintain or cause to be maintained anywhere upon the sur-

face of the roadway of any public street in this city and county paved with either bituminous rock, asphalt, or brick, or upon the surface of any improved sidewalk therein, either any lime, mortar or any concrete in a moist state, for any purpose whatsoever, or to mix or prepare the same upon such roadway or such sidewalk, unless such mortar or such concrete be placed, mixed or prepared in a tight box or upon a close-fitted platform or bed constructed and maintained to the satisfaction of the Board of Public Works.

The provisions of this section, however, shall not be applicable to the placing, maintaining, mixing or preparing of concrete upon the roadway of a public street, intended solely for use in necessary street work, provided that the same be not maintained thereon for a period of time exceeding forty-eight hours, under such regulations as the Board of Public Works may prescribe, and, further provided, that all debris, dirt or other material resulting from or produced by such use be completely removed from such roadway thereafter.

## NUMBERING OF BUILDINGS.

### When Completed to be Numbered.

Section 289. Every person, firm or corporation owning any building, or the agent thereof, must within two weeks after the completion or occupation of such building, place, or cause to be placed, on or over the door or gate used as an entrance to such building, or adjacent to such door or gate so as to be readily seen from the street, the appropriate number of such building, as herein specified.

### Entrances to Be Numbered.

Section 290. All entrances from streets to buildings, or to separate apartments in buildings, shall be numbered, and it shall be unlawful for any person, whether owner or occupant of the building or any apartment therein, to place, maintain or allow to remain thereon any number other than the one required by this Ordinance. The number placed upon any entrance shall be

of a different color from the background upon which it is placed, and each figure of such number shall be at least one and three-quarters inches in height and of proportionate width.

All numbers must be made of substantial and permanent material and must be so placed or affixed as not to be easily effaced or removed.

The fees to be charged by the Board of Public Works for designating the proper number as required by this Ordinance are as follows:

Apartments houses .....	\$2
Garages .....	\$2
Warehouses .....	\$2
Residences, cottages, dwellings.....	\$1
All other buildings .....	\$2

to be paid before any number is issued by the department.

#### Method of Numbering.

Section 291. Market Street shall be the starting point for the numbers of all buildings fronting on the streets beginning thereat and running therefrom in any direction. On Webster, Fillmore, Steiner, Pierce, Scott, Divisadero, Broderick, Baker and Lyon Streets and Central Avenue and streets in the Sunnyside, Lakeview, Railroad Homestead and City Land Association tracts, the numbering shall begin at their southerly ends and proceed toward the north. On all streets having a northerly and southerly course, or diverging less than forty-five (45) degrees from a northerly and southerly course, and not otherwise provided for, the numbering shall begin at their northerly ends and proceed toward the south. On all streets except as hereinafter provided having an easterly and westerly course, or diverging less than forty-five (45) degrees from an easterly and westerly course, the numbering shall begin at their easterly ends and proceed toward the west. **Provided**, that on streets lying south of Army Street and running from Mission in an easterly or southerly direction, and also on Bernal Avenue, Montezuma and Aztec Streets, Esmeralda Avenue and on streets in Gift Maps 1 and 2,

the numbering shall start at their westerly ends and proceed toward the east. On all intermediate or subdivision streets the numbering shall commence where the streets begin and proceed in the same direction as the numbering on the principal streets between which they lie.

Section 292. On all streets the numbers on the right hand side, starting from the point of beginning, shall be even numbers, and the numbers on the left hand side shall be odd numbers; **provided**, that on all streets lying west of Central Avenue and Presidio Avenue, but not including the former, and having a northerly and southerly course, the numbers on the right hand side, starting from the point of beginning, shall be odd numbers and the numbers on the left hand side shall be even numbers.

Section 293. One hundred numbers or as many there-of as may be necessary, shall be allotted to the property frontage in each block between two main streets, the number 100 being the first number on the right hand side, and the number 101 being the first number on the left hand side of the second block of all streets, except those lying west of Central Avenue and Presidio Avenue, but not including the former. The succeeding hundreds shall be allotted in similar manner consecutively to each succeeding block; **provided, however**, that on Mission, Natoma, Howard, Folsom, Harrison, Bryant, Jackson, Pacific, Broadway, Vallejo, Green, Union, Francisco, Bay and Webster Streets and on Central Avenue one hundred numbers shall be allotted to the first two blocks. One hundred numbers shall also be allotted on Divisadero Street between Waller and Page Streets. It is further provided that when the length of a block exceeds 850 feet except on Market Street, two hundred numbers shall be allotted to such block.

For the purpose of preserving uniformity in the numbering along Market Street, so that the numbers on both sides of said street shall conform as nearly as possible fifty even numbers shall be allotted to each of the following apportionments of frontage along the northerly side of Market Street: Between the westerly line of Spear Street produced northerly and easterly line of

Drumm Street, between Battery and Montgomery Streets, between Kearny and Stockton Streets, between Powell and Taylor Streets, and between Jones Street and Marshall Square.

Fifty odd numbers shall be allotted to each of the following apportionments of frontage along the southerly side of Market street: Between East and Spear Streets, between Twelfth and Valencia Streets, between Guerrero and Dolores Streets, between Dolores and Church Streets, and between Church and Divisadero Streets.

When any street fails in its course to traverse certain blocks one hundred numbers shall be allotted to each block not traversed in the same manner as if the street were continuous. When any street is intersected on its opposite sides by different streets, the hundreds on one side shall be made to correspond as closely as possible to the hundreds on the opposite side by allotting only twenty-five numbers, even or odd as the case may require, to the side on which the blocks are shorter.

One number shall be allowed for each one-fiftieth of the frontage of each block between two main streets, except in blocks having a frontage of less than four hundred feet, where the allowance shall be made on the basis of one number to every eight feet of frontage.

### Renumbering.

Section 294. Nothing in this Ordinance shall authorize the Board of Public Works to renumber any block which is now uniformly numbered in accordance with any previous Ordinance, unless such renumbering is made necessary by the construction or alterations of buildings whereby the number of entrances to buildings on such blocks has been so increased as to prevent consecutive numbering without confusion.

### Notice to be Given.

Section 295. It is hereby made a duty of the Board of Public Works, whenever it has knowledge of any violation of any of the provisions of this Ordinance relating to the numbering of buildings, to give notice thereof to the owner, or, if he cannot be found to the

occupant of the premises where the violation occurs; and if, after two weeks, the cause of complaint has not been removed, to have the penalty provided in this Ordinance enforced.

### **Temporary Retention of Old Numbers.**

Section 296. Wherever any property owner has been notified to change the numbers of his building the old numbers may be temporarily retained, in addition to the new numbers; **provided, however,** that in no case shall such old numbers be retained for a period longer than sixty (60) days after the official notice to change the same.

## **MISCELLANEOUS PROVISIONS.**

### **Removal of Paint From Buildings.**

Section 297. It shall be unlawful for any person, association or corporation to undertake the removal of paint from any wooden building or other structure by the process of burning without first having given the Chief Engineer of the Fire Department at least three (3) days' written notice of intention to perform said work, and without having secured permission from said engineer as a precaution against fires and conflagrations which might arise from the careless performance of said work.

### **Board of Public Works to Stop Construction of Certain Buildings.**

Section 298. The Board of Public Works shall have the power to stop the construction of any building or the making of any alteration or repairs to any building when the same is done in a reckless or careless manner, or in violation of any of the provisions of this Ordinance, and to order in writing or verbally any and all persons in any way or manner whatever engaged in so constructing, altering or repairing any such building, to stop and desist therefrom, and the person or persons so ordered shall immediately comply therewith.

Section 299. Whenever, in the judgment of the Board of Public Works, any building, or any portion thereof, or any appurtenances thereto, or any structure, or any

chimney, smokestack, stove, oven, furnace or thing connected with any building or upon any premises or place, is dangerous, defective or unsafe, the said Board shall notify the owner thereof and shall order and cause the same to be torn down, altered, repaired or rebuilt, or such work to be done thereon as the said Board deems necessary to render the same safe.

### **Inspectors' Right to Enter Building.**

Section 300. The Architect and Inspectors of the Board of Public Works and of the Department of Health, so far as may be necessary for the performance of their duties, shall have the right to enter any new or unoccupied building, or any building under construction, repair, alteration or removal, or any building alleged to be unsafe, or a menace to life and limb, upon showing their badge of office.

Section 301. Ordinance No. 31 (New Series) known as "The Building Law" of the City and County of San Francisco and entitled "Regulating the construction, erection, enlargement, raising, alteration, repair, removal, maintenance, use and height of buildings; regulating character and use of materials in and for buildings; establishing fire limits and repealing all Ordinances in conflict with this Ordinance," and New Series Ordinances numbered 46, 53, 66, 68, 102, 123, 124, 133, 190, 196, 269, 284, 289, 293, 294, 313, 323, 343, 364, 367, 368, 377, 381, 382, 383, 393, 394, 395, 396, 423, 437, 438, 439, 447, 448, 487, 488, 489, 555, 573 and 679, amending said Ordinance No. 31 (New Series), all other Ordinances amendatory thereof and all Ordinances or parts of Ordinances in conflict herewith are hereby repealed. But this Ordinance shall not be held to apply to or to regulate the erection or alteration of any building the permit for which has heretofore been given, but such building may be completed under the regulations in force at the time such permit was given.

### **Penalty.**

Section 302. Any person, firm, company or corporation that violates, disobeys, omits, neglects or refuses to comply with, or that resists or opposes the execution of

any of the provisions of this Ordinance, shall be guilty of a misdemeanor and upon conviction thereof shall be punished by a fine not exceeding five hundred (500) dollars, or by imprisonment for not more than six (6) months or by both such fine and imprisonment; and every such person, firm, company or corporation shall be deemed guilty of a separate offense for every day such violation, disobedience, omission, neglect or refusal shall continue, and shall be subject to the penalty imposed by this section for each and every separate offense; and any builder or contractor who shall construct any building in violation of any of the provisions of this Ordinance, and any architect having charge of such building, who shall permit it to be so constructed, shall be liable to the penalties provided and imposed by this section.

#### Frame Buildings in Fire Limits.

**Ordinance No. 1139. (New Series.)** Providing for the Removal not later than May 1st, 1911, of all the buildings erected since April 18, 1906, within the City and County of San Francisco in violation of the Building Laws and Ordinances of said City and County of San Francisco; requiring the Board of Public Works to serve notice hereof on all owners of property affected hereby, and providing penalties for violation hereof. Approved April 12, 1910.

Section 1. All buildings and structures erected previous to the passage of this Ordinance and subsequent to April 18, 1906, within the City and County of San Francisco, in violation of and contrary to the laws and Ordinances of said City and County of San Francisco, are hereby ordered demolished or removed on or before May 1, 1911.

Section 2. The Board of Public Works is hereby directed to forthwith serve notice upon all owners and lessees or agents of owners or lessees of property affected by the provisions of this Ordinance.

Section 3. It is hereby made the duty of the Board of Public Works to enforce the provisions of this Ordinance, and said Board of Public Works is hereby au-

thorized and directed to demolish or remove any building or structure affected by this Ordinance upon the failure of the owner or agent of the owner thereof to comply with the terms of this Ordinance, and the cost of said demolition or removal shall constitute a first lien on said building or structure and the material thereof.

Section 4. Any person, company, corporation or association, or any officer or agent of any person, company or corporation, failing to comply with the provisions of this Ordinance shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine not exceeding \$500, or by imprisonment in the county Jail not exceeding six (6) months, or by both such fine and imprisonment.

Section 5. Ordinance No. 333 (New Series), approved January 9, 1908, is hereby repealed.

Section 6. This Ordinance shall take effect and be in force immediately. .

**Ordinance No. 746. Regulating the Construction of buildings used as Public Automobile Garages; regulating and providing for the storage and use of gasoline in public and private automobile garages; repealing Ordinance No. 33 (New Series), approved July 16, 1906.**

Section 1. **Definitions**—An automobile is any self-propelling vehicle.

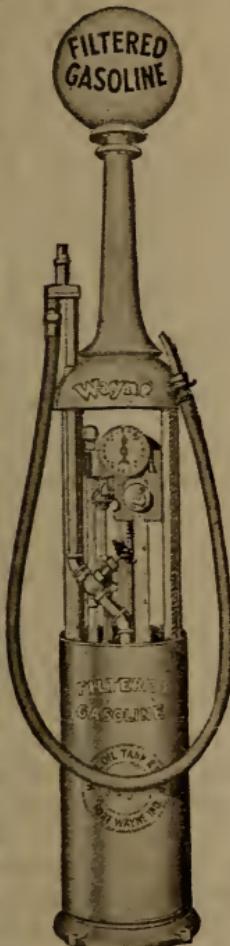
A. A public garage is a building where automobiles are kept and stored by the public; where automobiles are rented out to and hired by the public; where a charge is made for the use of or for the storage and the keeping of automobiles.

B. A private garage is a building where one or more automobiles are kept and stored for private use only, and not rented or hired out to the public, or any charge is made for storage.

C. Gasoline shall mean and include any product of petroleum flashing below the temperature of one hundred and ten (110) degrees Fahrenheit.

D. The Fire Marshal of the City and County of San Francisco shall decide the flashing point of all gasoline.

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E. Approved means approved by the Fire Marshal.

**Section 2. Board of Supervisors to Grant Permits.**

It shall be unlawful for any person, firm or corporation hereafter to conduct or maintain any building or premises to be used as a public garage without first obtaining a permit therefor from the Board of Supervisors of the City and County of San Francisco, specifying the name of the permittee and the location of the premises to be used as a public garage and the amount of gasoline desired; provided, however, that the Board of Supervisors in the granting or refusal of such permit shall exercise a reasonable and sound discretion, taking into consideration the character of the applicant for such permit and the intended location of such public garage; and further provided, that all persons, firms or corporations now conducting a public garage shall, after the passage of this Ordinance, comply with all the requirements hereafter specified in this Ordinance governing the storage of an additional supply of gasoline.

**Section 3. Notices to Be Posted.**—When application is made to the Board of Supervisors by any person, firm or corporation to conduct and maintain a public garage said applicant shall cause to be posted conspicuously on their premises a notice to the effect that application has been made to the Board of Supervisors for the granting of such permit, said notice to be posted immediately after the filing of the application and to be kept posted until said application is finally granted or denied.

**Section 4. Fire Marshal to Report.**—All applications for permits to store gasoline in public garages shall, before final action is taken thereon by the Board of Supervisors, be referred to the Fire Marshal for investigation, and to report the conditions necessary to be embodied in the Resolution granting such privileges to the petitioners. Furthermore said Fire Marshal shall furnish each applicant with a written or printed copy of all the requirements imposed by this Ordinance for their information and guidance as to the manner in which gasoline shall be stored in public garages, and shall also furnish the Clerk of the Board of Supervisors with a copy of said conditions.

**Section 5. Construction of Buildings used as Public Garages.** All buildings hereafter erected, altered or changed, so as to be occupied as public garages, for the purpose of storing automobiles, shall be of Class "A," "B" or "C" construction, except that public garages over one story in height shall be of class "A" or "B" construction in all parts, excepting that the roof, and the partitions of such portions as are used exclusively for office purposes may be of frame construction. The flooring of the first floor shall be concrete, with a system of ventilation with openings to the outer air at floor line, not less than six (6) by eight (8) inches for each ventilator. There shall at all times be maintained in every such building used for the aforesaid purpose two (2) chemical fire extinguishers of not less than three (3) gallons each where the floor space is less than five hundred (500) square feet, and one (1) additional chemical fire extinguisher for every additional five hundred (500) square feet of floor space used for such purpose. On the main floor of all public garages there shall be not less than four (4) barrels of clean dry sand, each barrel to contain an iron scoop.

No part of any building which is used as a hotel, apartment house, rooming house, or lodging house, hall or place of public assembly, shall be used as a public garage for the purpose of storing automobiles.

**Section 6. Storage of Gasoline**—One approved five (5) gallon can of gasoline, or gasoline kept in approved portable filling tanks, commonly called buggies, may be stored inside of a private or public garage. No one approved portable filling tank or buggy shall contain more than fifty (50) gallons of gasoline; all said approved portable filling tanks or buggies shall be mounted on all-metal wheels with rubber tires, each to be equipped with an approved pump, fitted with hose attachment not to exceed eight (8) feet in length, fitted at the end with a ground shut-off nozzle, the gasoline to be pumped into the reservoir of the automobile from the said approved portable filling tank or buggy.

All other methods of storing gasoline shall be as follows: All gasoline shall be stored in tanks, outside the

walls of all buildings, under the sidewalk, in tanks constructed of not less than No. 12 gauge galvanized steel, riveted, steel to steel joints, soldered and coated with tar or other rust-resisting material, or in iron tanks of not less than three-sixteenth (3-16) of an inch in thickness, riveted and caulked, coated with tar or other rust-resisting material.

No one tank to contain more than three hundred (300) gallons of gasoline.

Not more than four (4) tanks of gasoline, making twelve hundred (1200) gallons of gasoline in the aggregate, shall be allowed to be stored for any one public garage.

Not more than one (1) storage tank of three hundred (300) gallons capacity shall be allowed to be stored for any one private garage; said storage tank shall not be installed without the consent of the Fire Marshal.

**Section 7. Installation of Storage Tanks**—All storage tanks shall be placed in the spot agreed upon with the applicant and the Fire Marshal.

A. All storage tanks must be placed outside the building under the sidewalk, close to the curb line.

B. Where the sidewalk is NOT excavated for basement use, the top of all storage tanks must be at least four (4) feet below the sidewalk; the space between the top of the tanks and the sidewalk shall be filled with earth.

C. Where the sidewalk IS excavated and used as part of basement the tanks may rest on the basement floor; a brick or concrete wall not less than twelve (12) inches in thickness shall be constructed around said storage tanks, extending up to four (4) feet above the top of said storage tanks; the space between the top of the tanks and the top of the walls shall be filled with earth, the earth covered with at least three (3) inches of concrete.

D. Where it is desired to utilize all space under the sidewalk for basement purposes, the top of the storage tanks shall be at least four (4) feet below the basement

floor; a brick or concrete wall not less than twelve (12) inches in thickness shall be constructed around said storage tanks, extending from bottom of tanks up to the basement floor; the space between the top of the tanks and the basement floor shall be filled with earth, the earth covered with the concrete flooring.

E. Where two or more tanks are installed, there shall be a brick or concrete dividing wall between each tank, not less than twelve (12) inches in thickness.

F. No tank shall be connected to another so as gasoline can flow from one to another.

G. No storage tank shall be covered with earth until an inspection has been made by the Fire Marshal.

H. All tanks stored in basements under the sidewalk must go close to the retaining walls of the street.

I. One storage tank may be installed for a private garage, on private property, with the consent of the Fire Marshal, provided said tank shall not be closer than twenty (20) feet to any building and covered with at least four (4) feet of earth.

**Section 8. Pumps**—All storage tanks shall be connected with an automatic closing valve pump, which may be located inside the building not below the first floor. All pumps must be placed above the top of the tanks. No gravity siphon or pressure system shall be used for taking gasoline from a storage tank.

**Section 9. Pipes**—All pipes must lead out of the top of all tanks.

A. All piping must be galvanized, and put together with litharge and glycerine.

B. A vent pipe shall be connected with all storage tanks, not less than one (1) inch, extending up outside the building, capped with a return bend covered with a fine mesh brass wire netting.

C. A filling pipe shall be connected with each tank extending up to sidewalk at curb line, capped with a water-tight screw cap.

**Section 10. Tanks, How Filled**—All storage tanks shall be filled from a tank wagon in the day time. In no case shall any tanks or drums of gasoline, empty or otherwise be allowed in, upon or about any automobile garage.

**Section 11. Filling Automobile Reservoirs**—Gasoline shall not be carried in open cans; if cans are used said cans must be of an approved design, approved by the Fire Marshal.

The reservoirs of an automobile may also be filled from approved portable filling tanks or buggies, not to exceed fifty (50) gallons each, at all times kept near an entrance of the garage, so in case of fire they may be readily removed from the building; such approved portable filling tanks or buggies shall be constructed as is described in Section 6 of this Ordinance.

**Section 12. Garage Regulations**—No gasoline shall be allowed to remain in any open can or open receptacle of any kind, in, upon or about any automobile garage.

A. No smoking shall be allowed inside of any building used as an automobile garage. A notice in large letters, "NO SMOKING," shall be displayed in a conspicuous place and manner on the floor and at all entrances to the garage.

B. Sand shall be kept in iron buckets in all garages. Every public garage shall also have on hand at all times at least four (4) barrels of clean sand, placed in different parts of the main floor and repair shop, each barrel to contain an iron scoop so as to throw sand on a gasoline or oil fire, also for absorbing waste oils that may fall upon the floor; such sand when saturated shall be removed from the building. The use of sawdust for absorbing oils in any garage is strictly prohibited.

C. All waste and rubbish of any kind must be kept at all times in metal receptacles, fitted with a tight cover.

D. No gasoline shall be put into or taken out of any automobile where there is an open light. All lamps on the automobile must be extinguished before filling.

E. No light of any kind other than electricity shall be used for illuminating purposes in any automobile garage.

F. No gasoline shall be used for motive power to supply any engine or machinery of any kind used or run by an automobile garage.

G. No stove, forge, torch or other furnace, flame or fire, except in the office or retiring room and the repair shop shall be allowed.

H. All electric motors, not actually a part of an automobile shall be located at least four (4) feet above the floor.

I. All repair shops shall be kept clean and the floor free from any oily waste or rags, all such rags and waste shall be kept in metal cans or receptacles covered with a tight-fitting cover.

J. No oils, gasoline or any inflammable material shall be allowed to be stored or kept in any lockers.

K. All lockers in automobile garages shall be so constructed as to permit of ready inspection.

**Section 13. Duty of the Fire Marshal**—It shall be the duty of the Fire Marshal to see that the provisions of this Ordinance are complied with, and for that purpose shall have access to any and all buildings used as automobile garages in the day time.

If any proprietor or manager of a public automobile garage shall fail or refuse to comply with any of the provisions of this Ordinance (which are for the public safety), said Fire Marshal shall report the same in writing to the Board of Supervisors. Said Board of Supervisors shall notify said proprietor or manager to appear before them and show cause why the permit which may have been granted to store gasoline as is provided in Section 2 of this Ordinance shall not be revoked.

If any proprietor or manager of a private garage fail or refuse to comply with any of the provisions of this Ordinance, said proprietor or manager shall be deemed guilty of a misdemeanor and punishable in the Police Court as provided for in Section 14 of this Ordinance.

**Section 13½.** It shall be unlawful for any person, firm or corporation to hereafter construct and maintain within the City and County of San Francisco, within the boundaries of two hundred feet of the entrance to any school or church, any public automobile garage.

**Section 14. Penalty**—Any person or persons, firm, company or corporation that violates, disobeys or refuses to comply with any of the provisions of this Ordinance shall be deemed guilty of a misdemeanor, and, upon conviction, shall be punished by a fine not exceeding five hundred (\$500) dollars, or by imprisonment in the County Jail for not more than six (6) months, or by both such fine and imprisonment; and each such person or persons, firm, company or corporation shall be deemed guilty of a separate offense for each day such violation, disobedience or refusal shall continue, and shall be subject to the penalty imposed by this Ordinance for each and every such separate offense.

**Section 15. Repealing All Conflicting Ordinances**—Ordinance No. 33 (New Series), approved July 16th, 1906, is hereby repealed.

#### Supply Stations.

#### **BILL NO. 2926. Ordinance No. 2659. (New Series.)**

Regulating the construction and use of buildings to be used as automobile supply stations; regulating and providing for the storage and use of gasoline in connection therewith.

**Section 1. “Definition.”**—The following terms shall have the following meaning whenever used in this Ordinance.

(a) “Automobile Supply Station” is a building of not more than one (1) story in height; not more than twenty-five (25) feet wide, twenty-five (25) feet long and not more than seventeen (17) feet high from the ground level. The flooring of all automobile supply stations shall be of concrete or earth, devoted wholly for the purpose of furnishing gasoline, lubricating oils and automobile supplies. All roofing shall be of fire-proof material.

(b) “Gasoline” shall mean any product of petroleum or any hydro-carbon liquid that will flash or emit an inflammable vapor below the temperature of one hundred and ten (110) degrees Fahrenheit. The Fire Marshal shall decide the flashing point.

(c) “Fire Marshal” shall mean the Fire Marshal of the City and County of San Francisco.

(d) "Approved" means approved by the Fire Marshal.

Section 2. "Permits."—It shall be unlawful for any person, firm, company or corporation hereafter to establish, conduct, operate or maintain an automobile supply station within the limits of the City and County of San Francisco, where more than one (1) quart of gasoline is stored or kept without first obtaining a permit therefor from the Board of Supervisors.

All applications to establish, conduct, operate or maintain an automobile supply station where more than one (1) quart of gasoline is to be stored or kept shall be made to the Board of Supervisors specifying the name of the permittee, the location of the premises to be used as an auto supply station, together with the amount of gasoline desired to be stored.

The Board of Supervisors shall grant and issue said permit, provided the applicant agrees to abide by and to comply with all the rules, regulations, requirements and provisions of this Ordinance; provided, however, the Board of Supervisors shall refuse the permit if in the judgment of the Board an automobile supply station at the proposed location would be particularly hazardous to the public safety; provided, further, the Board of Supervisors shall not grant or issue any permit to conduct, operate or maintain an automobile supply station within the boundaries of two hundred (200) feet of any school, church, theater or hospital; said measurement to be taken from the front entrance of the automobile supply station to the front entrance of said school, church, theater or hospital.

Where no more than one (1) quart of gasoline is stored or kept a permit from the Board of Supervisors to conduct, operate and maintain an automobile supply station shall not be required.

Section 3. "Construction of Buildings Used as Automobile Supply Stations."—All buildings hereafter erected and all buildings hereafter altered or changed so as to be occupied as automobile supply stations, shall be of Class "A," Class "B" or Class "C" construction, with concrete or earth floors.

No automobile supply station shall exceed the following dimensions: Not more than one (1) story in height; not more than twenty-five (25) feet wide and twenty-five (25) feet long and not more than seventeen (17) feet high from the ground level.

No basement shall be allowed in any automobile supply station.

Automobile supply stations shall be devoted wholly to the sale of gasoline, lubricating oils and automobile supplies.

**Section 4. "Fire Protection for Automobile Supply Stations."**—There shall be at all times maintained in, at, or near the entrance to every automobile supply station at a place or places designated by the Fire Marshall for the extinguishment of fires, not less than two (2) three-gallon chemical fire extinguishers or other fire extinguishers which have been approved by the Fire Marshal, one (1) barrel and two (2) iron buckets full at all times of clean dry sand; said barrel to contain at all times an iron scoop so that the sand may be readily thrown on gasoline or oil fires. Sand must also be used for absorbing waste oils that may fall upon the floor; such sand when saturated shall be removed from the premises.

The use of sawdust for absorbing gasoline or oils on the floor of any automobile supply station is strictly prohibited.

**Section 5. "Storage of Gasoline."**—Except as herein-after provided in this Ordinance, all gasoline shall be stored in underground tanks, not to exceed the following capacity and amounts: No gasoline or any other product of petroleum or hydro-carbon liquid that will flash or emit an inflammable vapor below the temperature of one hundred and ten (110) degrees Fahrenheit, shall be allowed inside the building of an automobile supply station; provided, however, gasoline may be kept above ground in approved, portable filling-wheel tanks. No one approved, portable filling-wheel tank shall have a capacity of more than fifty (50) gallons.

Not more than two (2) approved, portable filling-wheel tanks shall be allowed for any one automobile supply station.

All said approved, portable filling-wheel tanks shall be mounted on all metal wheels with rubber tires, each to be equipped with an approved pump, fitted with hose attachment not to exceed eight (8) feet in length, fitted with a ground shut-off nozzle.

All portable filling-wheel tanks when not in use shall be kept near the entrance of the automobile supply station so that in case of fire they can be readily removed from the building.

No one (1) storage tank shall have a capacity greater than three hundred (300) gallons.

Not more than four (4) tanks of three hundred (300) gallons capacity each of an aggregate total amount of twelve hundred (1200) gallons of gasoline shall be stored in connection with any one (1) automobile supply station.

Said storage tank or tanks shall be constructed and installed as hereinafter provided.

**Section 6. "Construction of Storage Tanks."**—All storage tanks must conform to the following specifications:

All storage tanks shall be constructed of not less than No. 12 U. S. Standard Gauge, galvanized steel, oxy-acetylene or electric welded, or riveted steel to steel joints, with rivets not more than one inch apart from centers; soldered and coated with tar or other rust-resisting material. Storage tanks may also be constructed of iron, not less than three-sixteenths of an inch in thickness, riveted and caulked-coated with tar or other rust-resisting material.

There shall be no openings or connections on any storage tank except on the top thereof; no tank shall be connected either directly or indirectly with any drain, catch basin, public or private sewer.

The openings on the top of a storage tank shall consist of one filling pipe, one suction pipe, and one vent pipe.

All storage tanks must be approved by the Fire Marshal.

Section 7. **“Installation of Gasoline Storage Tanks.”**  
—All gasoline storage tanks shall be installed in the following manner.

A. All storage tanks must be placed outside of the building, under sidewalk, in a spot agreed upon between the applicant and the Fire Marshal, as near the curb as possible. The top of said storage tank or tanks shall be at least four (4) feet below the ground level. The space between the top of the tank or tanks shall be filled with earth.

B. Where two (2) or more tanks are installed, there shall be a brick or concrete dividing wall between each tank, not less than twelve (12) inches in thickness, or three (3) feet of earth.

C. No storage tank shall in any manner be connected to another storage tank; each tank must have separate filling pipe, suction pipe and vent pipe. All pipes must be galvanized, and shall come out of the top of the tank or tanks, and put together with litharge and glycerine.

D. All storage tanks shall be provided with one (1) inch diameter vent pipe. Said vent pipe must extend up at least twelve (12) feet above the ground level, upon the outside of the building, attached to the wall with pipe hooks, and shall be capped at the top with a return bend, the opening of which shall be covered with a brass or copper wire mesh of at least thirty (30) mesh.

E. All storage tanks shall be filled from a tank wagon, between the hours of sunrise and sunset.

In no case shall any storage tank or tanks be filled from drums or barrels. No drum or barrel of gasoline, empty or otherwise, shall be allowed in, upon or about any automobile supply station.

F. No storage tank shall be covered with earth until inspection has been made or permission has been granted to do so by the Fire Marshal. The applicants shall notify the Fire Marshal when the tank or tanks are ready for inspection.

G. All filling pipes shall extend up to the sidewalk, capped with a water-tight screw cap, securely locked.

Section 8. **“Pumps.”**—All storage tanks shall be connected with an automatic “closing valve pump,” which may be located in or outside of the automobile supply station.

All gasoline must be pumped from the storage tank or tanks. No gravity, siphon or pressure shall ever be used for taking gasoline from the storage tank or tanks.

Storage tanks may be connected with one pump, provided the suction pipes siamese at the pump with valves to close on all suction pipes.

Gasoline shall not be carried in open cans, or used to fill automobile reservoirs or containers. If cans are required they must be of an approved design.

Section 9. **“Automobile Supply Station Regulations.”**—The owner, permittee, lessee, manager or superintendent of an automobile supply station shall be held responsible for any violations of the following regulations, which are for the public safety:

A. No automobile shall be allowed to be stored or remain upon the premises of an automobile supply station, except while filling.

B. No automobile shall be allowed to be repaired or cleaned upon the premises of an automobile supply station.

C. No gasoline shall be allowed to remain above ground, except in approved portable filling-wheel tanks, as is provided for in Section 5 of this Ordinance.

D. Smoking shall not be allowed inside of an automobile supply station, or near an automobile which is being filled with gasoline. A notice “NO SMOKING” in letters of not less than three (3) inches shall be displayed in a conspicuous place and manner.

E. All waste, rags and rubbish of any kind shall be kept at all times in metal receptacles, fitted with a tight cover and shall be removed every day.

F. No gasoline shall be put in or taken out of the reservoir of an automobile where there is an open light. All lamps on automobiles must be extinguished before filling automobile reservoirs with gasoline.

G. No open light shall be allowed in any automobile supply station. Electricity only shall be used for illuminating purposes in any automobile supply station.

H. No stove, forge, torch or other furnace, flame or fire shall be allowed in, upon or about an automobile supply station.

I. The floor and premises of an automobile supply station must be kept clean and free from oil or rubbish.

J. All machinery of an automobile must be shut off and the automobile dead, while gasoline is being poured into the reservoir or container of the automobile.

Section 10. "**Duties of the Fire Marshal.**"—It shall be the duty of the Fire Marshal to see that the provisions of this Ordinance are complied with, and for that purpose shall have access to any and all buildings or premises used as an automobile supply station.

In the event that any person, firm, company, corporation or permittee to whom a permit has been granted by the Board of Supervisors to conduct, operate or maintain an automobile supply station, shall violate, cause or permit to be violated any of the provisions of this Ordinance (which are for the public safety) or shall conduct, operate or maintain or carry on the same in an unlawful or dangerous manner, it shall be the duty of the Fire Marshal to notify said person, firm, company, corporation, or permittee in writing to appear before the Board of Supervisors of the City and County of San Francisco, within five days after the service of said notice, to then and there show cause why the permit which has been granted to conduct, operate or maintain an automobile supply station, and to store gasoline as provided in this Ordinance, shall not be revoked.

If the said person, firm, company, corporation or permittee on whom said notice was served by the Fire Marshal to appear before the Board of Supervisors, fails, disobeys or refuses to appear before the said Board of Supervisors, it shall be the duty of said Board of Supervisors, in addition to the penalty provided in this Ordinance, to notify in writing said person, firm, company, corporation or permittee to whom a permit has been issued by the Board of Supervisors to conduct, operate or maintain an automobile supply station, that said permit, through failure and neglect to appear before the Board of Supervisors, is revoked. Said person, firm, company, corporation or permittee, on whom

notice was served by the Fire Marshal to appear before the Board of Supervisors, and who failed, refused and neglected to appear before said Board of Supervisors, is hereafter liable to the penalty imposed by this Ordinance, if said person, firm, company, corporation or permittee shall continue to conduct, operate or maintain an automobile supply station after being notified in writing that the permit issued by the Board of Supervisors has been revoked.

Section 11. This Ordinance shall not repeal, alter nor amend any existing Ordinance.

Section 12. **Penalty.**—Any person, firm, company or corporation that violates, disobeys or refuses to comply with any of the provisions of this Ordinance shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not less than ten dollars nor more than fifty dollars, or by imprisonment in the County Jail for not more than thirty days, or by both such fine and imprisonment, and such person, firm, company or corporation shall be deemed guilty of a separate offense for each and every day that such violation, disobedience or refusal shall continue and shall be subject to the penalty imposed by this Ordinance for each and every separate offense.

### SIGN ORDINANCE.

ORDINANCE NO. 1009.

(New Series.)

**Regulating the Construction, Erection and Maintenance of Signs, Transparencies, Advertisements, Bulletin Boards and Clocks on or About Buildings or Over Public Streets and Thoroughfares, Providing for the Inspection of the same.**

Section 1. No sign, transparency, advertisement or sign device included in any of the classes set forth in Section 5 of this Ordinance shall be hereafter constructed, placed, reconstructed or allowed on or about the exterior of any building or other structure, or on or over any sidewalk or public thoroughfare, unless drawings to scale of the proposed sign, together with such information relative to the dimensions, position and structure of such sign as may be required shall have

been first submitted to the Board of Public Works, and a permit shall have been obtained for the erection thereof.

Section 2. It shall be the duty of the Board of Public Works, through its authorized representatives, upon the filing of drawings and specifications as provided in Section 1, to examine such drawings and specifications, and, if necessary, the premises upon which it is proposed to erect the sign, and if it shall appear that the proposed sign is in accordance with all Ordinances, regarding its dimensions, position, fireproof qualities and structural safety and security, the Board of Public Works shall issue a permit for the erection of the sign. During and after completion of the erection of the sign, the Board of Public Works shall cause the same to be inspected, and if upon inspection it is found that the sign is in accordance with all Ordinances regarding its dimensions, position, fireproof qualities and structural safety and security a Certificate shall be issued by the Board of Public Works, approving the sign.

Section 3. Before any sign, transparency, advertisement or sign device is erected which is intended to be used in connection with electricity, a permit shall be secured from the Board of Public Works, as provided in Section 1, and this permit, together with specifications of the proposed electrical construction, shall be submitted to the Department of Electricity. It shall be the duty of the Department of Electricity to examine such specifications, and if the proposed sign is found to be in accordance with all Ordinances regarding electrical construction (and, in the case of projecting signs, required illuminating qualities), said department shall issue a permit for such electrical construction. No sign intended to be used in connection with electricity to be erected unless permits have been secured from both the Board of Public Works and the Department of Electricity.

Upon the completion of the electrical construction for which permits are issued or required as above provided, the Department of Electricity shall inspect the sign, and if it is found to be in accordance with all Ordinances regarding electrical construction (and in the case of projecting signs, required illuminating qual-

ties), the Department of Electricity shall issue a Certificate of satisfactory inspection, permitting the connection of current supply to the sign; nor shall current be turned on any sign until said Certificate has been issued, except by special permission of the Department of Electricity for the purpose of testing the sign.

Section 4. The person, firm, association or corporation constructing or installing, or causing the construction or installation of any electric sign, transparency, advertisement, device, reconstruction or alteration, shall, before issuance of certificate of satisfactory inspection as above said, pay to the herein said Department of Electricity, for the inspection made as in Section 3 hereof provided for, the sum of two dollars and fifty cents (\$2.50) for each hour of time reasonably consumed by each inspector in the making of such inspection, including time reasonably consumed in going to the place of inspection from office of the said Department and in returning from said place to said office; provided that the fee paid shall not in any case be less than three dollars (\$3.00).

Section 5. Signs requiring permits for their erection, as provided in Sections 1, 2 and 3 are classified as follows:

1. All signs intended to be used in connection with electricity.
2. All signs erected on roofs.
3. All signs projecting over sidewalks or public thoroughfares more than 6 inches.
4. All signs fastened to the exterior of buildings and having an area of more than twelve (12) square feet.

Section 6. **Signs Projecting From Buildings.**—It shall be unlawful for any person, company or corporation hereafter to place or maintain upon or attach to any building or premises, any sign, advertisement, transparency or bulletin board which shall project over or upon the sidewalk, except such as are embraced within the following ten classes:

Class A. Flat or curved signs, incandescent electric light signs and transparencies fastened for their whole length parallel to the front of the building, and not

projecting therefrom over the sidewalk more than eight (8) inches when placed less than eight (8) feet above the sidewalk, nor more than twelve (12) inches when placed eight (8) feet or more above the sidewalk.

For the purpose of this Ordinance, the term "front of building" shall be construed to mean the general outer surface of the main wall of the building facing the street, except in the case of bay windows or pillars projecting beyond the main wall of the building, the outer surface of such windows or pillars shall be considered the face of the building at those points.

Class B. Drum signs attached to the pillars or entrances to buildings, and not projecting therefrom over the sidewalk more than eight (8) inches when placed less than eight (8) feet above the sidewalk nor more than twelve (12) inches when placed eight (8) feet or more above the sidewalk.

Class C. "V" signs inclosing pillars or attached at the base of the signs to the buildings, and not projecting therefrom more than six (6) inches when placed less than eight (8) feet above the sidewalk nor more than twelve (12) inches when placed eight (8) feet or more above the sidewalk.

Class D. Pole signs, free from any separate signs attached thereto, and not projecting over the sidewalk from the building more than twelve (12) inches.

Class E. Swinging electric signs illuminated by electric lamps, the total rated candlepower of the lamps in or on any such sign to equal not less than eight (8) candlepower per square foot of the combined area of both sides of said signs. Provided that said swinging electric signs shall not exceed seven (7) feet in vertical dimensions nor project beyond the line of the outer edge of the sidewalk, and no part of said sign shall be less than ten (10) feet above the sidewalk; and further provided that said sign and metal frame shall be attached to the building by means of suitable hinges or sockets in such manner as will permit said signs to be swung back parallel to and against the building and not project more than eighteen (18) inches from the face of the building or pillars or bay window against which said sign will be placed when swung back, except that

when such swinging electric signs are placed between two adjacent bay windows which will prevent said signs from being swung back to within eighteen (18) inches of the face of the building, then said signs may be swung back so as not to project beyond the outer line facing the street of said bay windows. All swinging signs and all ropes, guys, braces or other supports attached to said signs shall be of metal and of sufficient strength to adequately sustain the same. Further provided that said incandescent electric light signs shall not be extended over or across the sidewalk except between the hours of 5 p.m. and 8 a.m., and shall be continuously illuminated every night from sunset to midnight when so extended.

Class F. Vertical incandescent electric light signs consisting of a vertical row of letters, illuminated with incandescent electric lights. Signs so constructed shall be not less than twelve (12) feet above the sidewalk, parallel to said buildings, and shall not project over the sidewalk more than four (4) feet from the property line of said building. Provided said signs are kept continuously illuminated every night from sunset to midnight.

Class G. Gas lamps and electric lamps on which signs may be placed and which shall not exceed in size the lamps and globes used in lighting the public streets; and, no inscription or sign other than the name of the person, corporation or firm at whose expense and in front of whose premises the lamp is erected or maintained shall be placed thereon. The said lamps or globes to be suspended in front of the building or premises at a distance not to exceed two and one-half (2½) feet therefrom, and at a height of not less than eight (8) feet above the sidewalk.

Class H. Flat or curved wire mesh signs with raised letters may be extended from the front of one bay window above the first story to an adjacent bay window, provided the projection of the sign from the front of the bay windows be not more than six (6) inches.

Class I. Bulletin boards which shall not project more than eight (8) inches beyond the front of the building.

Class J. Signs upon the face of metal awnings, provided said signs do not extend over the sidewalk for a greater distance than the awning and are not more than two (2) feet in vertical dimension. The lower line of such signs must not be less than ten (10) feet above the sidewalk.

Section 7. Temporary signs, advertisements or flags may, however, be suspended over the sidewalk in front of the building or premises upon holidays, election days and days of public parade or display, when the same shall be placed and secured in a manner satisfactory to the Board of Public Works, and shall be removed immediately thereafter.

Section 8. All clocks to be hereafter erected on the sidewalks shall be ornamental in character and construction and shall be erected just inside and abutting on the curb line. All clocks to be erected shall be of a height not less than ten (10) feet, and the face of said clocks shall be not less than two (2) feet nor more than three (3) feet in diameter.

No advertisement, notice, words, lettering, inscription or name shall be painted, placed or fastened on the same or upon the pole or standard upon which they are mounted. All clocks erected or maintained hereunder shall be kept in good condition and correctly indicate the time. No clock shall be erected on any sidewalk unless the design of said clock has been approved by the Board of Public Works and a written permit received from said Board for its erection.

All clocks now erected or hereafter erected upon sidewalks, shall be considered as temporary obstructions only and removable at the pleasure of the Board of Supervisors whenever said Board deems that the public good so requires; all permits issued for the erection of said clocks shall contain this proviso.

Section 9. Copper wire shall be used exclusively when signs are fastened to buildings with wire. Any person, company or corporation maintaining a sign or advertisements upon or in front of the premises of which he is the owner or occupant, or over which he has control, shall, upon notice from the Board of Pub-

lice Works, cause such signs or advertisements to be placed, secured and fastened in such a manner as the Board of Public Works may direct. In case of failure to comply with such notification, the Board of Public Works is authorized to cause the removal forthwith of such sign or advertisement; such authority, however, shall not affect the penalties herein imposed upon the person, company or corporation or officers thereof for a violation of the provisions of this section.

Section 10. No sign whatsoever shall hereafter be constructed, placed or affixed on, over or above the roof of any building in said City and County of San Francisco, which is more than thirty feet in height from the bottom line to the top line of such sign, and unless such sign, if placed upon a building two stories in height, be placed and built not less than three (3) feet from the inner line of the firewall parallel with the street which said sign shall face. And where said sign is constructed upon a building more than two stories in height, then said sign shall not be placed within four (4) feet from the inner line of the firewall parallel with the street that said sign shall face. No such sign shall be so constructed on a building two stories in height that the bottom line of said sign shall be less than five (5) feet above the surface of the roof of said building; and no sign shall be so constructed upon a building more than two stories in height that the bottom line of said sign shall be less than six (6) feet above the surface of the roof upon which such sign is constructed. There shall be a clear space of not less than six (6) feet between all uprights supporting said sign as well as all braces thereof.

All framework and bracing of said sign shall be of steel construction and securely bolted and fastened to the roof of the building on which it is installed. That the construction of said sign shall be of such a character as to obtain the approval of the Board of Public Works of the City and County of San Francisco.

Section 11. No attachable sign or framework, boards, cloth or other material to or on which any sign, advertisement, picture or notice is painted, printed, pasted,

made or impressed, affixed or fastened, shall be hereafter constructed, placed, affixed or maintained in said City and County:

Upon the outer wall of any building higher than the blocking course or fire wall of such building.

In front of any fire escape or stand pipe attached to such building without a written permit from the Chief Engineer of the Fire Department.

Across or in front of any exterior window or other exterior opening in such building above the first story thereof, except such sign be a swinging electrical sign.

Section 12. Nothing herein contained, however, shall be construed to render unlawful the maintenance of any sign, transparency or advertisement projecting from any building or premises over any sidewalk, within said City and County, which sign, transparency or advertisement has been erected or maintained under a lawful permit prior to the passage of this Ordinance.

Section 13. All rights and privileges acquired under the provisions of this Ordinance or any amendment thereto permitting the erection or maintenance of signs projecting over the sidewalks or public thoroughfares, are mere licenses and revocable at any time by the Board of Supervisors.

Section 14. All Orders and Ordinances, or parts of Orders and Ordinances, in so far as they conflict with the provisions of this Ordinance, are hereby repealed.

Section 15. It shall be the duty of the Chief of Police of the herein said City and County to strictly enforce this Ordinance.

Section 16. Any person, firm, association or corporation violating any provision or provisions of this Ordinance shall be deemed guilty of a misdemeanor, and, upon conviction thereof shall be punished by a fine not exceeding five hundred dollars (\$500.00), or by imprisonment in the County Jail for not exceeding six (6) months, or by both such fine and imprisonment.

**SENATE BILL NO. 258.**  
**CHAPTER 197.**

**An act in relation to fences and other structures erected to annoy, and for the abatement of nuisances.**

(Approved May 28, 1913.)

Section 1. Any fence or other structure in the nature of a fence, unnecessarily exceeding ten feet in height maliciously erected or maintained for the purpose of annoying the owner or occupants of adjoining property, shall be deemed a private nuisance.

Section 2. Any such owner or occupant, injured either in his comfort or the enjoyment of his estate by such nuisance may enforce the remedies against the continuance of the same prescribed in title III, part III of the Civil Code of the State of California.

**ORDINANCE NO. 302.**

Approved May 24, 1901.

Providing for the Regulation and Controlling of the Storage of Crude Petroleum, Use of Crude Petroleum, Storage of Any of the Products of Petroleum; Use of Gasoline; Storage of Kerosene or Coal Oil; Adulterations of Oils Prohibited; Cases and Packages of Heating or Illuminating Oils to be Stamped; Test of Oils and Instruments to be Used. Refining Oils; Storage of Explosives; Prohibiting the Transportation of Nitro-Glycerine; Storage of Gunpowder; Conveyance of Gunpowder; Gunpowder Shipping; Discharging and Having Gunpowder on Board; Gunpowder When Loaded to be Immediately Forwarded; Vessels Having Gunpowder on Board to be Afloat at Low Tide; Storage and Sale of Fireworks; Duty of the Police; Transportation of Calcium Carbide; Liquefied Acetylene; Duty of the Fire Marshal; Erection of Gas Works or Gas Machines; Gas Engines. Arson—Reward for Arrest of. Rubbish, Shavings; Hay, Straw or Litter. Gas and Electric Lights in Show Windows. Ashes; Fires in Open Tins, Cans, Etc. Manufacture of Matches. Enforcement of the Provisions of This Ordinance; This Ordinance to Take Effect.

### Storage of Crude Petroleum.

Section 1. No person or persons, firm, company or corporation shall keep, store or permit the storage of, within the limits of the City and County of San Francisco, any crude petroleum, in larger quantities than fifty (50) gallons, to be always kept in metal cans or iron tanks, except within that portion of the City and County of San Francisco bounded and described as follows, to wit:

Commencing at the intersection of the shore line of the Bay of San Francisco with the northerly and easterly end of King Street; running thence in a southweste-  
rly direction along the center line of King Street to its intersection with the center line of Division Street; thence in a westerly direction along the center line of Division Street to the center line of Potrero Avenue; thence in a southerly direction along the center line of Potrero Avenue to its intersection with the center line of Twenty-fifth Street; thence in an easterly direction along the center line of Twenty-fifth Street to its intersection with the center line of San Bruno Avenue; thence in a southerly direction along the center line of San Bruno Avenue to the county line of San Francisco; thence in an easterly direction following the county line of San Francisco to its intersection with the Bay of San Francisco; thence in a northerly and northwesterly direction following the line of the water front to the point of commencement.

All crude petroleum kept or stored within the above described limits shall be stored in steel tanks; the thickness of the plates used in the construction of said tanks shall be in accordance with the requirements of the Fire Marshal.

All storage tanks shall be enclosed by a solid brick wall, capable of retaining the contents of the tank; there shall be no opening of any kind in said walls; said walls shall be of such construction, height and thickness as the Fire Marshal shall prescribe.

All storage tanks shall be constructed, erected and placed in position to the satisfaction and with the approval of the Fire Marshal.

Provided, however, that the Fire Marshal of the City and County of San Francisco may, when granting a permit to store and use crude petroleum for fuel in any part of said City and County, grant with said permit an additional permit to keep on hand for use only enough crude petroleum as said Fire Marshal may determine necessary. Said crude petroleum shall be stored in such a place and manner as said Fire Marshal shall deem safe to life and property.

Provided, further, however, that this section shall not apply to gas companies in the storage or use of crude petroleum in the manufacture of illuminating gas for public use.

#### \* Use of Crude Petroleum.

Section 2. No person or persons, firm, company or corporation shall, within the limits of the City and County of San Francisco, construct, erect or maintain any plant, or use any device or apparatus for burning crude petroleum or any of its products for fuel purposes, or use any device or apparatus whereby gas is generated from crude petroleum or any of its products for fuel purposes, without permission of the Board of Supervisors of the City and County of San Francisco; said plant, device or apparatus shall be constructed, erected and placed in position to the satisfaction and with the approval of the Fire Marshal of the City and County of San Francisco and in such manner as said Fire Marshal shall deem safe to life and property.

The Fire Marshal is hereby authorized, empowered and directed to prescribe the necessary conditions which shall govern the exercise of special privileges granted by the Board of Supervisors for the storage and use of crude petroleum as a fuel.

Provided, however, that this section shall not apply to ordinary kerosene or coal oil lamps or properly constructed kerosene or coal oil stoves using oil which will stand a fire test of 110 degrees Fahrenheit or better, before it will flash or emit an inflammable vapor.

No crude petroleum or any of its products, or any oils or fluids, shall be used for fuel, cooking, heating or

illuminating purposes within the City and County of San Francisco, unless the same will stand a fire test of 110 degrees Fahrenheit or better, before it will flash or emit an inflammable vapor.

### Storage of Any of the Products of Petroleum.

Section 3. No person or persons, firm, company or corporation, shall keep, store, or permit the keeping of, or storage of, within the limits of the City and County of San Francisco in larger quantities than fifty (50) gallons, to be always kept in metal cans or iron tanks in any one building or upon any premises, place or street, any of the products of petroleum, including gasoline, benzine, naptha or any hydro-carbon liquid, which will flash or emit an inflammable vapor at a temperature of below 110 degrees Fahrenheit, except within that portion of the City and County of San Francisco, which is particularly bounded and described in Section 1 of this Ordinance, for the storage of crude petroleum.

All products of petroleum, including gasoline, benzine, naptha or any hydro-carbon liquid, which will flash or emit an inflammable vapor at a temperature below 110 degrees Fahrenheit, which are kept or stored within that portion of the City and County of San Francisco, and which is particularly bounded and described in Section 1 of this Ordinance, for the storage of crude petroleum, shall be kept or stored in steel tanks, the thickness of the plates used in the construction of said storage tanks shall be in accordance with the requirements of the Fire Marshal of said City and County.

Said storage tanks shall in all cases be enclosed and entirely surrounded by a solid brick wall, capable of retaining and holding the contents of each storage tank; there shall be no opening of any kind in said walls; said walls shall be of such construction, height and thickness as the Fire Marshal of the City and County may prescribe.

All storage tanks shall be constructed, erected and placed in position to the satisfaction and with the approval and under the direction of the Fire Marshal of the City and County.

In lieu of storing of any of the articles herein mentioned in steel tanks enclosed in brick walls, the said articles may be stored in a building or warehouse.

All buildings or warehouses used for the keeping or storing of any of the products of petroleum, including gasoline, benzine, naptha or any hydro-carbon liquid, and within that portion of the City and County of San Francisco, which is particularly bounded and described in Section 1 of this Ordinance, for the storage of crude petroleum shall be constructed of brick or stone, not to exceed one story height, and the walls of all said buildings or warehouses shall not be less than seventeen (17) inches in thickness; the sills of all such buildings or warehouses shall be raised at least two feet high, so as to prevent the overflow of such substance beyond the building or warehouse where any of the said articles may be kept or stored.

All said buildings or warehouses must in all respects be fireproof and devoted exclusively to the storage of said articles.

#### **Use of Gasoline.**

Section 4. No person or persons, firm, company or corporation shall use for heating, burning, illuminating purposes or for generating gas, any gasoline, benzine or naptha within the limits of the City and County of San Francisco, without a printed permit, issued and signed by the Fire Marshal of the City and County of San Francisco.

Application for permit must be made to the above named officer and must give the name of the applicant, the location of the premises where it is proposed to use the above named liquid and the manner in which it is proposed to use it.

Said permit will be granted by said Fire Marshal, except where, in the judgment of the Fire Marshal, the use by the applicant in the manner proposed by him would endanger the safety of life and property.

#### **Storage of Kerosene or Coal Oil in Certain Limits.**

Section 5. No person or persons, firm, company or corporation shall keep, store, or permit the storage of, within the limits of the City and County of San Fran-

cisco, any kerosene or coal oil, in any one building or upon any premises or street, in larger quantities than five hundred (500) gallons, to be always kept in metal cans or iron tanks, except within that portion of the City and County of San Francisco, which is particularly bounded and described in Section 1 of this Ordinance for the storage of crude petroleum; and all buildings to be used for the storage of kerosene or coal oil and within that portion of the City and County of San Francisco, which is particularly bounded and described in Section 1 of this Ordinance for the storage of crude petroleum, shall be constructed as provided in Section 3 of this Ordinance for the storage of any of the products of petroleum.

#### **Adulteration of Oils Prohibited.**

Section 6. No person or persons, firm, company or corporation shall mix, adulterate or offer for sale any oils used for heating or illuminating purposes, with benzine, naptha, gasoline or any other substance; and all oils or fluids manufactured from petroleum or any of its products to be used for heating or illuminating purposes, shall be required to stand a fire test of 110 degrees Fahrenheit, or better, before it shall flash or emit an inflammable vapor.

#### **Cases and Packages of Heating or Illuminating Oils to Be Stamped.**

Section 7. Any person or persons, firm, company or corporation, manufacturing or selling heating or illuminating oils or fluids made from petroleum or any of its products, shall be required to have stamped upon the case, package or can where easily seen, and in plain letters at least one-half inch in length, the name of the oil or fluid which the case, package or can contains; the name of the seller thereof and his place of business, and, if the case, package or can contains kerosene or coal oil to be used for heating or illuminating purposes, the words "Warranted to stand a fire test of 110 degrees Fahrenheit, or better, before it will flash or emit an inflammable vapor," shall also be stamped on each case,

package or can; and any seller disposing of five gallons, more or less, in metal cans or otherwise, shall furnish a sample of the oil, whenever requested to do so by the Fire Marshal for the purpose of testing.

#### **Test of Oils, Instruments to Be Used.**

Section 8. Any question arising under the provisions of this Ordinance as to the character of the oils mentioned in this Ordinance, the same shall be tested by the Fire Marshal of the City and County of San Francisco, and he shall decide the test of such oils, and the decision of the Fire Marshall shall be final.

The said oils shall be tested and their quality determined by the Fire Marshal, using an electric spark open tester; and it shall be the duty of the Fire Marshal to carry out the provisions of this Ordinance in regard to all products of petroleum, and said Fire Marshal may enter on any premises, place or store where such oils are manufactured, stored, kept or sold, for the purpose of examining such oils, and no person shall hinder or obstruct such officer in carrying out the foregoing provisions of this section.

#### **Refining Oils Within Certain Limits.**

Section 9. No person or persons, firm, company or corporation, shall boil or refine any crude petroleum or any of its products, or boil or refine any oils, or maintain or erect or cause to be erected any works for boiling or refining oils, within the City and County of San Francisco, except within that portion of the City and County of San Francisco bounded on the westerly side by Kentucky Street, Railroad Avenue and San Bruno Avenue; on the south by the county line; on the east by the water front of said City and County, and on the north by Islais Creek.

#### **Storage of Explosives Within Certain Limits.**

Section 10. No person or persons, firm, company or corporation shall manufacture or cause to be manufactured, or bring or cause to be brought into, or receive or keep or store, or suffer to remain within the limits of the City and County of San Francisco, any blasting powder, hercules or giant powder, nitroglycerine,

daulin, dynamite or other explosive, liquid or material, or compound having an explosive power greater than that of ordinary gunpowder, except within that portion of the City and County of San Francisco bounded on the westerly side by Kentucky Street, Railroad Avenue and San Bruno Avenue; on the south by the county line; on the east by the water front of said City and County, and on the north by Islais Creek.

No blasting powder, hercules or giant powder, nitro-glycerine, daulin, dynamite, or any other explosive liquid or material, or compound, having an explosive power greater than that of ordinary gunpowder, kept or stored within the limits of the City and County of San Francisco, which is bounded and described in this section, shall be within five hundred feet of any dwelling house or place of business.

Provided, that this section shall not apply to the freight terminals and yards in said City and County of steam railroad corporations subject to the jurisdiction of the Railroad Commission of the State of California, who receive or deliver freight within such terminals or yards, when the explosives received for shipment or held for delivery in such terminals or yards are in less than carload lots.

Provided, further, that this section shall not apply to the United States Government Reservation at the Presidio and Fort Mason (Black Point), or to any shipments of explosives to be used for the purpose of the United States Government.—As amended by Ordinance No. 1945 (New Series), approved June 26, 1912.

#### **Prohibiting the Transportation of Nitroglycerine.**

Section 11. No person shall convey or cause to be conveyed from one place to another in the City and County of San Francisco, any liquid nitro-glycerine; and no person or persons, firm, company or corporation, shall manufacture or cause to be manufactured any liquid nitro-glycerine within the limits of the City and County of San Francisco, and no liquid nitro-glycerine shall be kept or stored, in or about or on any premises or street, within the limits of the City and County of San Francisco.

### Storage of Gunpowder.

Section 12. No person or persons, firm, company or corporation, shall receive, keep or store, or cause to be received, kept or stored, or aid or assist any person in receiving, keeping or storing gunpowder in a larger quantity than ten pounds, into or in any building or upon any premises, within the City and County of San Francisco, except while within the custody of a steam railroad carrier subject to the jurisdiction of the Railroad Commission of the State of California, and in its freight terminals or yards, awaiting shipment by it, or pending delivery to a consignee, and except as herein-after provided.

Any person or persons, firm, company or corporation, keeping or storing more than ten pounds of gunpowder, shall keep the same in an air-tight metallic vessel; said vessel shall be marked with the words "Gunpowder—Dangerous" in plain letters, painted in white on a dark ground, not less than three inches in height; said vessel shall be kept at all times in view near the entrance of the premises where kept, so as to be easily removed; said vessel shall contain not more than fifty pounds of gunpowder.

No person or persons, firm, company or corporation shall keep or store, or cause to be kept or stored, or aid or assist any person in receiving, keeping or storing more than fifty pounds of gunpowder in the City and County of San Francisco, except within the freight terminals and yards in said City and County of steam railroad corporations subject to the jurisdiction of the Railroad Commission of the State of California, and receiving or delivering freight within such terminals or yards, when the explosives received for shipments or held for delivery in such terminals or yards are in less than car-load lots, and except within those portions of said City and County, which are particularly designated and described in Section 10 of this Ordinance, or under the conditions named therein.—As amended by Ordinance No. 1945 (New Series), approved June 26, 1912.

### Conveyance of Gunpowder

Section 13. No person or persons, firm, company or corporation, shall convey or cause to be conveyed or

assist in conveying, in any vehicle or otherwise any gunpowder, unless the same shall be securely packed in air-tight metallic packages; said packages shall be securely covered while in the vehicle.

### **Gunpowder—Shipping, Discharging and Having It On Board.**

Section 14. No person or persons, firm, company or corporation shall discharge gunpowder from any vessel, except from the vessel's side and before the said vessel shall have been hauled up to the wharf.

No vessel shall be permitted to remain at any wharf within the limits of the City and County of San Francisco more than twenty-four (24) hours after receiving gunpowder on board; and if the vessel shall lie at the wharf over night, a watchman shall be kept on duty on board said vessel all night.

### **Gunpowder When Loaded to Be Immediately Forwarded.**

Section 15. All gunpowder deposited on the wharf for shipment shall be immediately passed on board the vessel which is to receive the same.

All gunpowder landed or placed on any sidewalk, street or public way for forwarding or shipment shall be forwarded or shipped immediately after it shall have been so landed or placed.

### **Vessels Having Gunpowder on Board to Be Afloat at Low Tide.**

Section 16. It shall be unlawful for any vessel to lie at any wharf, pier or bulkhead, with gunpowder on board, unless such vessel will be afloat at low tide.

### **Gunpowder, Manufacture and Storage of Fireworks.**

Section 17. No person or persons, firm, company, corporation or association shall receive, keep or store, or have in any one place, more than fifty (50) pounds of gunpowder, or shall erect or maintain any building for the storage or keeping of gunpowder, or for the manufacture of or storage of fireworks, within the limits of the City and County of San Francisco, except within that portion of the City and County of San Francisco bounded and described as follows:

Commencing at the intersection of the shore line of the Bay of San Francisco with the easterly end of Islais Creek, thence westerly along the center line of Islais Creek to Railroad avenue; thence southerly along the center line of Railroad avenue to its intersection with the center line of San Bruno avenue; thence in a southerly direction following the center line of San Bruno avenue to the county line of San Francisco; thence following the county line of San Francisco in an easterly direction to the shore line of the Bay of San Francisco; thence along the shore line of the Bay of San Francisco in a northerly and northwesterly direction to the point of commencement.—As amended by Ordinance No. 271 (New Series), approved September 24, 1907.

#### **Duty of the Police.**

Section 18. It shall be the duty of all police officers to at once notify the Fire Marshal upon their becoming cognizant of the violation of any of the provisions of this Ordinance.

#### **Transportation of Calcium Carbide.**

Section 19. All calcium carbide in transit through the City and County of San Francisco must be inclosed in hermetically sealed metal receptacles and plainly marked "Calcium Carbide—Dangerous If Not Kept Dry," and no such receptacle shall contain more than one hundred and twenty (120) pounds of said carbide.—As amended by Ordinance No. 494 (New Series), approved July 6, 1908.

#### **Storage of Calcium Carbide.**

Section 20. All calcium carbide shall be kept in hermetically sealed metal receptacles.

And it shall be unlawful for any person or persons, firm, company, association or corporation to keep, store or permit the keeping or storage of, within the limits of the City and County of San Francisco, any calcium carbide in greater quantities than one hundred and twenty (120) pounds in the aggregate, except in that portion of said City and County bounded on the westerly side by Kentucky street, Railroad avenue and

San Bruno avenue, on the south by the county line, on the east by the water front of said City and County, and on the north by Islais Creek.

Provided, however, that the Fire Marshal of the City and County of San Francisco may, when granting a permit to erect any gas machine in any part of said City and County, grant with said permit an additional permit to keep on hand for use only enough calcium carbide not to exceed 100 pounds in the aggregate, to supply said gas machine. Said calcium carbide to be stored in such a place and manner as said Fire Marshal shall deem safe to life and property.

All buildings to be used for the storage of calcium carbide within that portion of the City and County of San Francisco hereinabove specified and described shall be constructed of corrugated iron, brick or stone, not to exceed one story in height, and the walls of said brick or stone building shall not be less than sixteen (16) inches in thickness, and must in all respects be fire and waterproof, and devoted exclusively to the storage of calcium carbide, and in all such buildings no artificial light or heat shall be permitted.—As amended by Ordinance No. 494 (New Series), approved July 6, 1908.

#### Sale of Calcium Carbide.

Section 21. No calcium carbide shall be kept or stored in any building used for dwelling purposes, and not more than one hundred and twenty (120) pounds of calcium carbide, either in cans, cartridges or otherwise, shall be stored in any building used as a garage, or for mercantile or manufacturing purposes, and this amount shall be kept only on a written or printed permit obtained from the Fire Marshal of the City and County of San Francisco, which permit shall provide that all packages of calcium carbide (not to exceed one hundred and twenty (120) pounds in the aggregate) shall be kept in water-tight packages, no one package to contain more than ten (10) pounds of calcium carbide, and further provided that all packages of calcium carbide shall be kept at all times in an iron water-tight receptacle. Said receptacle shall be placed near the front entrance of the premises, so as to be easily

removed in case of fire, and shall be plainly marked with letters of not less than three (3) inches, "Calcium Carbide—Dangerous If Not Kept Dry."—As amended by **Ordinance No. 494 (New Series)**, approved July 6, 1908.

### **Liquefied Acetylene.**

Section 22. The manufacture, transportation, storage, sale or use of liquefied acetylene is absolutely prohibited within the limits of the City and County of San Francisco.

### **Duty of the Fire Marshal.**

Section 23. It shall be the duty of the Fire Marshal to carry out the provisions of this Ordinance, and the Fire Marshal shall have access to any and all buildings during the day time where calcium carbide is stored or kept, to see that all provisions of this Ordinance are strictly complied with.

### **Erection of Gas Works or Gas Machines for the Manufacture of Illuminating Gas.**

Section 24. No person or persons, firm, company or corporation, shall erect any works, apparatus, gas machine or machinery of any kind for the manufacture of illuminating gas within the City and County of San Francisco without first obtaining a permit from the Fire Marshal of the City and County of San Francisco.

### **Gas Engines.**

Section 25. No person or persons, firm, company or corporation, shall erect or maintain, or cause to be erected or maintained, any gas engine above the first floor of any building within the City and County of San Francisco, without a permit from the Fire Marshal of the City and County of San Francisco.

### **Gasoline, Distillate or Vapor Engines.**

Section 26. No person or persons, firm, company or corporation, shall erect, maintain or use, or cause to be erected, maintained or used, within the limits of the City and County of San Francisco, any gasoline, distillate or vapor engine of any kind, whereby a gas is generated from crude petroleum or any of its products,

for the motive power of said gasoline, distillate or vapor engine of any kind without a permit from the Fire Marshal of the City and County of San Francisco.

Said permit shall be granted by said officer, except where, in the judgment of the Fire Marshal, the use of the gas engine by the applicant in the manner proposed by him would endanger the safety of life and property.

#### **Arson—Reward for Arrest and Conviction of the Offenders.**

Section 27. Whenever a fire shall appear to have been caused by incendiarism, or when any bonfire shall have been kindled or fire shall have been set to a building or structure in violation of the provisions of this Ordinance, the Mayor may, upon application of the Fire Marshal or at his discretion, offer a reward of not more than \$250 for the arrest and conviction of the offender, and the Mayor may at any time, when in his opinion it appears expedient, offer a standing reward not to exceed \$250 for the arrest and conviction of any person guilty of arson, or of any attempt at arson, and any reward which may become payable under the order of the Mayor, shall be paid out of the Treasury of the City and County.

#### **Rubbish, Shavings, Hay, Straw or Litter**

Section 28. Each person in the City and County of San Francisco, making, using or having the charge or control of shavings, hay, straw, sacks, bags, litter or any other combustible waste or fragments, shall, at the close of each day, cause the same to be securely stored or disposed of, so as to be safe from fire.

All receptacles for waste, rags, paper or other substance liable by spontaneous combustion or otherwise to cause fire must be made of incombustible material.

And all such receptacles shall be kept in such a place that were the contents of said receptacles to ignite, the same may be easily seen and removed.

No explosive or inflammable compound or combustible material of any kind shall be kept, stored or placed under any stairway of any building, or used in such place or manner as to obstruct or render egress hazardous in case of fire.

### Gas Lights and Electric Lights in Show Windows

Section 29. All gas lights, gas burners, arc lights or incandescent lights in show windows, shall be covered with wire netting or globes; but this shall not apply to stationary gas reflectors in the upper portion of such show windows.

No goods of any kind or description shall be displayed, placed, hung or suspended within six inches of any such wire netting or globe, used as a covering for any gas light, gas burner, arc light or incandescent light, in show windows.

### Ashes

Section 30. It shall be unlawful for any person or persons to deposit any ashes, cause the same to be deposited, or placed, or to permit or suffer the same to be or remain in any wooden vessel or receptacle, or any vessel or receptacle composed or made of combustible material, but said ashes shall be placed and kept in some safe depository or receptacle of galvanized iron or other incombustible material, and not less than two inches from any woodwork or structure.

### Fires in Open Tins, Cans, Etc.

Section 31. No person shall kindle or maintain any fire of charcoal, coal, wood or other combustible material in or upon any open tin, metal can or any earthen vessel or vessels whatsoever, in or upon any building or premises in this City and County, or in any furnace, range or stove of any kind, unless the same be connected by means of a good sheet-iron flue or pipe with a brick or patent chimney to conduct the smoke and fire into said brick or patent chimney.

Provided, however, that the foregoing provisions of this Ordinance shall not be deemed to apply to portable furnaces used by artisans in the prosecution of their regular and lawful business, or to properly constructed and authorized kerosene or gas stoves used for cooking purposes or for the heating of chambers.

### Manufacture of Matches.

Section 32. No person or persons, firm, company or corporation shall manufacture matches, erect or cause

to be erected, any works, apparatus, machinery or building for the manufacture of matches within the City and County of San Francisco, except within that portion of the City and County of San Francisco bounded on the westerly side by Kentucky street, Railroad avenue and San Bruno avenue; on the south by the county line; on the east by the water front of said City and County, and on the north by Islais Creek.

### **Portable Lights; Protection Combustible Materials.**

Section 33. No person shall use any portable light in any building or place where combustible materials are kept unless such light be securely enclosed in a lantern; and no person shall use a light in any place where combustible materials shall be suspended above it, without so protecting it as to prevent such materials from falling upon or coming in contact with it.

### **Enforcement of the Provisions of This Ordinance.**

Section 34. The Fire Marshal of the City and County of San Francisco is hereby directed to see that the provisions of this Ordinance are enforced, and to that end the said Fire Marshal is hereby authorized and empowered, whenever any complaint shall be made to him of the violation of any of the provisions of this Ordinance, and he has reasonable grounds to believe that any of the provisions of this Ordinance have been or are being violated by any person or persons, firm, company or corporation, to enter any premises, place or building about which complaint is made, or upon or in which he has reasonable grounds to believe that any of the provisions of this Ordinance have been or are being violated.

And the said Fire Marshal is hereby directed to make complaints in the Police Courts against any person or persons, firm, company or corporation violating any of the provisions of this Ordinance.

### **Penalty.**

Section 35. Any person or persons, firm, company or corporation that violates, disobeys or refuses to comply with any of the provisions of this Ordinance shall be deemed guilty of a misdemeanor, and, upon conviction,

shall be punished by a fine not exceeding five hundred dollars or by imprisonment in the County Jail for not more than six months, or by both such fine and imprisonment; and each such person or persons, firm, company or corporation shall be deemed guilty of a separate offense for every day such violation, disobedience or refusal shall continue, and shall be subject to the penalty imposed by this Ordinance for each and every such separate offense.

### **Repealing All Conflicting Orders or Ordinances.**

Section 36. All orders or parts of orders, and all Ordinances or parts of Ordinances in so far as they conflict with any of the provisions of this Ordinance are hereby repealed.

Section 37. This Ordinance shall take effect and be in force from and after its passage.

### **BILL NO. 5627. Ordinance No. 5251. (New Series.)**

Amending Ordinance No. 745 (New Series), approved April 26, 1909, entitled "Regulating the Storage and Use of Benzine, Gasoline, or Any Product of Petroleum, or Any Hydro-carbon Liquid, Which Will Flash or Emit an Inflammable Vapor Below the Temperature of One Hundred and Ten (110) Degrees Fahrenheit; Stored or Used for Dye Works, Clothes Cleaning Establishments, Cleansing or Renovating Any Article of Wearing Apparel or Fabric of Any Kind." Repealing any portion of Section 3 of Ordinance No. 302, approved May 24, 1901, in conflict with this Ordinance by adding a new section thereto to be known as Section No. 10A.

Section 1. **"Definitions."** The term benzine or gasoline wherever used herein, shall mean any product of petroleum or any hydro-carbon liquid that will flash or emit an inflammable vapor below the temperature of one hundred and ten (110) degrees Fahrenheit.

A. **"Approved."** Shall mean approved by the Fire Marshal.

B. **"Dye Works or Clothes Cleaning Establishments."** Shall mean any building or premises where more than

one (1) quart of benzine or gasoline is kept or stored to be used for cleaning or renovating any clothing or article of wearing apparel, or fabric of any kind.

C. "Tests." The Fire Marshal of the City and County of San Francisco shall test and decide the flashing point.

Section 2. "**Board of Supervisors to Grant Permits.**" It shall be unlawful for any person, firm or corporation hereafter to establish or maintain a Clothes Cleaning Establishment where more than one (1) quart of benzine or gasoline is kept or stored, without first obtaining a permit therefor from the Board of Supervisors of the City and County of San Francisco, specifying the name of the permittee and the location of the premises to be used as such Clothes Cleaning Establishment, and the amount of benzine or gasoline desired; provided, however, that the Board of Supervisors in the granting or refusal of such permit shall exercise a reasonable and sound discretion, taking into consideration the character of the applicant and the intended location of such Clothes Cleaning Establishment; and further provided that all persons, firms or corporations now conducting the business of Clothes Cleaning shall after the passage of this Ordinance comply with all of the requirements hereafter specified in this Ordinance governing the storage and use of benzine or gasoline. No permit shall be granted by said Board of Supervisors where any part or portion of a building is used or occupied as a hotel, apartment house or lodging house.

Section 3. "**Notices to Be Posted.**" When application is made to the Board of Supervisors by any person, firm or corporation to conduct and maintain a Clothes Cleaning Establishment, said applicant shall cause to be posted conspicuously on the premises a notice to the effect that application has been made to the Board of Supervisors for the granting of such a permit, said notice to be posted immediately after the filing of the application and to be kept posted until said application is finally granted or denied.

Section 4. "**Fire Marshal to Report.**" All applications for permits to store benzine or gasoline to be used by

Clothes Cleaning Establishments shall, before final action is taken by the Board of Supervisors, be referred to the Fire Marshal for investigation, and to report the conditions necessary to be embodied in the Resolution granting such privilege to the petitioners. Furthermore, said Fire Marshal shall furnish each applicant with a written or printed copy of all the requirements imposed by this Ordinance, for information and guidance as to the manner in which benzine or gasoline shall be stored for cleansing or renovating clothing or any article of wearing apparel, or fabric of any kind, and shall also furnish the Clerk of the Board of Supervisors with a copy of said conditions.

Section 5. **“Storage of Benzine or Gasoline.”** Not more than one (1) approved five (5) gallon can of benzine or gasoline shall be kept or stored for use above ground in any Clothes Cleaning Establishment; nor more than one (1) quart of benzine or gasoline shall be kept inside of the building.

All quantities of benzine or gasoline in excess of five (5) gallons shall be stored outside the walls of all buildings, under the sidewalk; in tanks constructed of not less than No. 12 gauge galvanized steel, riveted, steel to steel joints, soldered and coated with tar or other rust-resisting material, or in iron tanks of not less than three-sixteenths (3-16) of an inch in thickness, riveted and calked, and coated with tar or other rust-resisting material.

No one tank to contain more than three hundred (300) gallons of benzine or gasoline.

Not more than four (4) tanks of benzine or gasoline making twelve hundred (1200) gallons of benzine or gasoline in the aggregate, shall be allowed to be stored in any one Clothes Cleaning Establishment or Dye Works.

Section 6. **“Installation of Storage Tanks.”** All storage tanks shall be placed in the spot agreed upon with the applicant and the Fire Marshal.

A. All storage tanks must be placed outside the building, under the sidewalk, close to curb line.

B. Where the sidewalk is not excavated for basement

use, the top of the storage tanks must be at least four (4) feet below the sidewalk, the space between the top of the tanks and sidewalk shall be filled with earth.

C. Where the sidewalk is excavated and used as part of basement, the tanks may rest on basement floor; a brick or concrete wall not less than twelve (12) inches in thickness shall be constructed around said storage tanks, extending from bottom of tank up to four (4) feet above the top of said storage tank; the space between the top of the tank and the top of the walls shall be filled with earth, the earth covered with three (3) inches of concrete.

D. When it is desired to utilize all space under the sidewalk for basement purposes the top of the storage tanks must be at least four (4) feet below the level of the basement floor; a brick or concrete wall not less than twelve (12) inches in thickness shall be constructed around said storage tanks, extending from bottom of tank up to the basement floor, the space between the top of the tanks and the basement floor shall be filled with earth, the earth covered with the concrete floor.

E. All tanks stored in the basement under the sidewalk must go close to the retaining wall of the street.

F. Where two or more tanks are installed there shall be a brick or concrete dividing wall between each tank not less than twelve (12) inches in thickness.

G. No tank shall be connected to another, so that benzine or gasoline can flow from one to another.

H. No tank shall be covered with earth until an inspection has been made by the Fire Marshal.

Section 7. **"Pumps."** All storage tanks shall be connected with an automatic closing valve pump, which may be located inside the building not below the first floor.

All pumps must be placed above the top of the tanks. No gravity, syphon or pressure system shall be used for taking benzine or gasoline from a storage tank.

Section 8. **"Pipes."** All pipes must lead out of the top of all tanks.

A. All piping must be galvanized.

B. All piping shall be put together with litharge and glycerine.

C. A vent pipe shall be connected with all storage tanks, not less than one (1) inch, extending up outside the building, capped with a return bend covered with a fine mesh of brass wire netting.

D. A filling pipe shall be connected with each tank extending up to sidewalk at curb line, capped with a water-tight screw cap.

Section 9. **"Tanks, How Filled."** All storage tanks shall be filled from a tank wagon in the day time. In no case shall any tanks or drums of benzine or gasoline, empty or otherwise, be allowed in, upon or about any Clothes Cleaning Establishment or Dye Works.

Section 10. **"Regulations."** No open light of any kind shall be allowed in any room where benzine or gasoline is used.

A. No benzine or gasoline shall be used for motive power to supply any engine or machinery of any kind.

B. No stove, forge, torch, boiler or furnace, flame or fire shall be allowed in any room where benzine or gasoline is used.

C. All electric motors shall be placed at least four (4) feet above the floor.

D. The flooring of all rooms where benzine or gasoline is used in greater quantities than five (5) gallons shall be of concrete, with a system of ventilation with openings to the outer air at floor line, not less than six (6) by eight (8) inches for each ventilator.

Section 10A. Construction of buildings used as dyeing and cleaning establishments as defined in Ordinance No. 745. All buildings hereafter erected and all buildings hereafter altered or changed so as to be occupied as a dyeing and cleaning establishment shall be of Class A, B or C construction.

Section 11. **"Duty of the Fire Marshal."** It shall be the duty of the Fire Marshal to see that the provisions of this Ordinance are complied with, and for that purpose the Fire Marshal shall have access to any and all buildings used as Clothes Cleaning Establishments or Dye Works during the day time.

If any proprietor or manager of any Clothes Cleaning Establishment or Dye Works shall fail or refuse to comply with any of the provisions of this Ordinance (which

are for the public safety), said Fire Marshal shall report the same in writing to the Board of Supervisors, said Board of Supervisors shall notify said proprietor or manager to appear before them and show cause why the permit which may have been granted to store benzine or gasoline, as is provided in Section 2 of this Ordinance shall not be revoked.

Section 12. **“Penalty.”** Any person or persons, firm, company or corporation that violates, disobeys or refuses to comply with any of the provisions of this Ordinance shall be deemed guilty of a misdemeanor, and, upon conviction, shall be punished by a fine not exceeding five hundred (500) dollars, or by imprisonment in the County Jail for not more than six (6) months, or by both such fine and imprisonment; and each such person or persons, firm, company or corporation shall be deemed guilty of a separate offense for every day of such violation, disobedience or refusal shall continue, and shall be subject to the penalty imposed by this Ordinance for each and every such separate offense.

Section 13. **“Repealing All Conflicting Ordinances.”** Any and all parts of Section 3 of Ordinance No. 302, approved May 24, 1901, in so far as it may conflict with the provisions of this Ordinance, is hereby repealed.

Section 14. This Ordinance shall take effect immediately.

**ORDINANCE NO. 4395. (New Series.)**

Adopted November 30, 1917.

**Regulating the Storage of Gasoline or Any Product of  
Petroleum Flashing Below 110 Degrees  
Fahrenheit.**

Section 1. It shall be unlawful for any person or persons, firm, company, or corporation to have in, upon or about their premises more than a total amount of fifty (50) gallons in the aggregate of benzine, gasoline or any product of petroleum that will flash or emit an inflammable vapor below a temperature of one hundred and ten (110) degrees Fahrenheit, except as provided for in Section 3 of Ordinance No. 302, approved May 24, 1901.

Section 2. No benzine, gasoline or any product of petroleum that will flash or emit an inflammable vapor below a temperature of one hundred and ten (110) degrees Fahrenheit, shall be kept or stored in glass bottles, or in any other fragile container. Five (5) gallons may be kept and stored in an approved can or cans, not to exceed five (5) gallons in the aggregate. All over five (5) gallons shall be kept and stored in an approved portable filling tank, commonly called a gasoline buggy.

Said approved portable filling tank or buggy shall not have a greater capacity than fifty (50) gallons and shall be constructed of not less than No. 12 U. S. Standard gauge, galvanized steel, or of iron not less than three-sixteenths (3-16) of an inch in thickness, oxy-acetylene welded, or riveted, with rivets not more than one (1) inch apart from centers; mounted on all metal wheels with rubber tires, soldered and painted on the outside.

The contents of said approved portable filling tank or buggy must be removed by using a pump. No gravity, siphon or pressure system shall be used in removing the contents from the approved portable filling tank or buggy.

Said approved portable filling tank or buggy must always be filled at the curb line of the sidewalk.

All portable filling tanks or buggies, or metal cans, must be approved by the Fire Marshal.

Section 3. Not more than a total amount of five (5) gallons of benzine, gasoline or any product of petroleum that will flash or emit an inflammable vapor below a temperature of one hundred and ten (110) degrees Fahrenheit, shall be kept or stored in any building for any purpose whatever, wherein a human being sleeps in the night time. Night time shall mean between the hours of sunset and sunrise.

Section 4. **“Safety Regulations.”** No benzine, gasoline or any product of petroleum that will flash or emit an inflammable vapor below a temperature of one hundred and ten (110) degrees Fahrenheit shall be kept or allowed to remain in an open receptacle in any building within the City and County of San Francisco.

A. One three (3) gallon chemical fire extinguisher which shall be approved by the Fire Marshal, shall be kept where easy of access at all times, where benzine, gasoline or any product of petroleum that will flash or emit vapor below a temperature of one hundred and ten (110) degrees Fahrenheit, is kept or stored for sale, in a greater quantity than five (5) gallons, so as to be used in case of fire.

B. The approved portable filling tank or buggy shall be kept at all times near the door leading into the street, so that it may be readily removed from the premises in case of fire.

Section 5. It shall be the duty of any and all members of the Board of Fire Wardens to see that all of these provisions and regulations are complied with, and for that purpose they shall have access at all times to any and all parts of the premises where benzine, gasoline or any products of petroleum that will flash or emit an inflammable vapor below a temperature of one hundred and ten (110) degrees Fahrenheit is kept or sold at retail.

Section 6. Any person who shall violate any of the provisions of this Ordinance shall be guilty of a misdemeanor and, upon conviction thereof, shall be punished by a fine not to exceed five hundred (500) dollars or by imprisonment in the County Jail for not more than six (6) months, or by both such fine and imprisonment.

Section 7. This Ordinance shall take effect and be in force immediately.

#### ORDINANCE NO. 223.

(Approved January 31, 1901.)

**Providing for the Construction and Control of Automatic Sprinkler Equipments for Buildings and Manufacturing Plants and the Connection of the Same with the Pipes and Mains of Persons, Companies or Corporations Furnishing Water to the Inhabitants of the City and County of San Francisco.**

Section 1. Every building and manufacturing plant which by specific permit of the Fire Department may hereafter be equipped with automatic fire extinguishers

must be so equipped in accordance with the requirements of this section. The owner or his agent or agents must have plans and specifications of such automatic sprinkler system prepared, which shall be submitted for approval to the Fire Department of the City and County of San Francisco, and when approved by it the apparatus must be constructed in accordance therewith and under the supervision of the Fire Department.

Section 2. There shall be no less than two sources of water supply for each system of automatic fire extinguishers which shall hereafter be constructed in and upon any one building or any one manufacturing plant consisting of more than one building. Said two sources of water supply shall be in accordance with the "Sprinkler Rules" of the Board of Fire Underwriters of the Pacific, but in no case shall any connection exceed one-half of the diameter of the main, nor exceed four inches as a maximum, except that in such cases where the above referred to "Sprinkler Rules" of the Board of Underwriters require a diameter of more than four inches, then it shall be optional with the person, company or corporation to either put in such sized connection or make up the required capacity by two pipes.

Section 3. Where one or both of the sources of water supply to any system of automatic fire extinguishers shall be from the pipes or mains belonging to any person, company or corporation supplying water to the inhabitants of the City and County of San Francisco, the connection with such pipes or mains belonging to said person, company or corporation shall be in accordance with the "Sprinkler Rules" of the Board of Underwriters of the Pacific, except as provided for in section 2, and such connection or connections shall be made by such person, company or corporation within thirty days after presentation of a specific permit of the Fire Department of the City and County of San Francisco. All costs and expenses of such connections and material for same, including a meter, shall be paid by the owner or owners of the property so equipped. A good and sufficient bond in the sum of one thousand (\$1,000.00) dollars may be required by said person, company or corporation furnishing water for said equipment as a

guarantee that the water supplied through such sprinkler equipment, or any part thereof, shall be used only for purposes connected with such sprinkler equipment.

Section 4. Any connection of any such automatic fire extinguisher system made with the mains of such person, company or corporation shall be by means of pipes, upon which shall be placed between the said automatic fire extinguisher system and the pipes or mains of such person, company or corporation, an indicator gate valve approved by the Fire Department, which shall be located at a point to be selected by the Fire Department not more than one hundred feet from the building or plant equipped with such automatic fire extinguisher system. Said pipes connecting such automatic fire extinguisher system with said meter and said indicator gate valve and such area walls as the Fire Department may require shall be constructed under the direction and supervision of the Fire Department, and said indicator gate valve shall be and remain in charge of and under the control of the Fire Department of the City and County of San Francisco.

Section 5. Any person who shall tap the pipes of any automatic sprinkler system for the purpose of using the water flowing therein for any other purpose than for use in such sprinkler system, or shall use the waters conducted through such system for any other purpose than for use in such sprinkler system, or shall maliciously interfere with said pipes or appliances, shall be deemed guilty of a misdemeanor, and, on conviction, shall for each offense be subject to a fine of not less than twenty-five dollars nor more than three hundred dollars; but should such water be used for any other purpose than for the purposes of the said automatic sprinkler, then the person, company or corporation with whose mains said apparatus has been connected shall have the right to disconnect said automatic sprinkler system from its mains (without any liability or claim of damage), and action may be had and taken under the terms of said bond.

Section 6. The Fire Department of the City and County of San Francisco is hereby authorized and directed to carry out the provisions of this Ordinance.

Section 7. This Ordinance shall take effect immediately.

ORDINANCE NO. 1144.

(Approved February 26, 1904.)

**Regulating the Use of Aisles and Passageways and Stairways in Theatres and Public Halls.**

Section 1. It shall be unlawful for the owner, lessee, manager or other person, firm or corporation having charge of any theatre or public hall to permit any person during a performance, exhibition, lecture, entertainment or public assemblage therein to sit or remain standing in any aisle, passageway or stairway in such theatre or public hall.

Section 2. All Ordinances and parts of Ordinances in so far as they conflict with this Ordinance, are hereby repealed.

Section 3. A violation of any of the provisions of this Ordinance shall be a misdemeanor, and shall be punishable by a fine not exceeding one hundred (100) dollars, or by imprisonment in the County Jail not exceeding one hundred (100) days, or by both such fine and imprisonment.

Section 4. This Ordinance shall go into effect from and after its passage.

ORDINANCE NO. 862.

(Approved June 26, 1903.)

**Prohibiting the Obstruction of Passageways of Theatres and Places of Public Assemblage.**

Section 1. It shall be unlawful for any person, firm or corporation having control or management of any theatre, hall, concert hall or other place of public assembly to obstruct, or cause or permit the obstruction, of any entrance, exit, aisle, stairway, lobby or passageway thereof, during any performance, exhibition, lecture, concert or any public assemblage therein.

Section 2. The owner, manager or person having control or management of any theatre, hall, concert hall or other place of public assemblage, must notify the Chief of Police at least six hours before the same shall be opened for the purpose of public assemblage therein.

Section 3. Any person, firm or corporation who shall violate any of the provisions of this Ordinance shall be guilty of a misdemeanor, and, upon conviction thereof, shall be punished by a fine not to exceed five hundred (500) dollars, or by imprisonment in the County Jail for not more than six (6) months or by both such fine and imprisonment.

Section 4. Order No 3071 of the General Orders of the Board of Supervisors, entitled "Prohibiting the Obstructing of Entrances, Exits, Aisles, Stairways, Lobbies or Passageways of Theatres or places of Public Assemblages—Chief of Police to Enforce, Etc.," is hereby repealed.

Section 5. This Ordinance shall take effect and be in force immediately.

ORDINANCE NO. 952. (New Series.)

Approved December 3, 1909.)

Requiring the Placing of Signs and Red Lights to Show the Location of Fire Escapes and Requiring Lights in the Hallways and Passageways of Hotels, Public Lodging Houses and Public Rooming Houses and Apartment Houses, for Public Safety, and Repealing Ordinance No. 913, Approved June 26, 1903.

Section 1. Every person, firm or corporation, owner, proprietor, manager, superintendent, lessee or agent of any building used as a hotel, public lodging house, public rooming house or apartment house within the City and County of San Francisco, shall place or cause to be placed in a conspicuous position in every hallway thereof, signs which shall indicate by letters, not less than three inches in height, the location of every fire escape; and near every such sign there shall be placed a red light, which must be kept burning from sunset to sunrise.

Section 2. Every person, firm or corporation, owner proprietor, manager, superintendent, lessee or agent of any building used as a hotel, public lodging house, public rooming house or apartment house, within the City and County of San Francisco, shall place or cause to be placed in every hallway and passageway a bright white light, capable of furnishing light enough to enable any

person to see the stairway and exit from said hallway and passageway, to guide them in case of fire or panic to safety. Said white light shall burn from sunset to sunrise.

Section 3. It shall be the duty of the Chief of Police to instruct all police officers to inspect all hotels, public lodging houses, public rooming houses and apartment houses on their respective beats, at least once a month during the hours of sunset and sunrise, for the purpose of seeing that the provisions of this Ordinance are strictly complied with.

Section 4. Every person, firm or corporation, owner, proprietor, manager, superintendent, lessee or agent, who shall violate or refuse to comply with the provisions of this Ordinance, shall be guilty of a misdemeanor and upon conviction thereof shall be punished by a fine of not less than ten dollars nor more than one hundred dollars, or by imprisonment in the County Jail for not more than three months, or by both such fine and imprisonment; and each such person, firm or corporation, owner, proprietor, manager, superintendent, lessee or agent shall be deemed guilty of a separate offense for every day such violation, or refusal, shall continue, and shall be subject to the penalty imposed by this Ordinance for each and every separate offense.

Section 5. Ordinance No. 913, approved June 26, 1903, is hereby repealed.

Section 6. This Ordinance shall take effect immediately.

ORDINANCE NO. 1021.  
(Approved October 27, 1903.)

**Prohibiting the Obstruction of Hydrants on Public Streets.**

Section 1. It shall be unlawful for any person to obstruct any hydrant on any public street, or to place or deposit any lumber, rock, sand, or other substance within fifteen (15) feet of any hydrant on the roadway of any street.

Section 2. Any person who shall violate any of the provisions of this Ordinance shall be guilty of a misdemeanor and, upon conviction thereof, shall be pun-

ished by a fine not exceeding five hundred (500) dollars, or by imprisonment in the County Jail for not more than six (6) months, or by both such fine and imprisonment.

Section 3. This Ordinance shall take effect and be in force immediately.

ORDINANCE NO. 2027. (New Series.)

(Approved September 25, 1912.)

**Prohibiting the Unauthorized Use of or Interference With the Auxiliary High Pressure Water System.**

Section 1. It shall be unlawful for any person to use or interfere with any of the valves, gates, hydrants, or other parts of the Auxiliary High Pressure Water System, unless authorized so to do by the Department controlling the same.

Section 2. Any person violating the provisions of this Ordinance shall be deemed guilty of a misdemeanor, and upon conviction thereof be subject to a fine not to exceed five hundred dollars or by imprisonment in the County Jail for not more than thirty days, or by both such fine and imprisonment.

ORDINANCE NO. 974. (New Series.)

(Approved December 8, 1909.)

**Requiring Clear Passageways in Stables Where Horses Are Kept, So That Such Horses May Be Easily Removed in Cases of Emergency.**

Section 1. In all stables where horses are kept and vehicles are stored, it shall be unlawful to obstruct the aisles or passageways with wagons, vehicles or otherwise, so as to prevent free access from the street to the stalls where the horses are kept, and a clear passageway shall be kept open at least eight feet wide from the main entrance to such stalls.

Section 2. Any person, firm or corporation violating any of the provisions of this Ordinance shall be deemed guilty of a misdemeanor and, upon conviction thereof, shall be liable to a fine of not more than five hundred dollars or by imprisonment in the County Jail for a period of not more than six months, or by both such fine and imprisonment.

Section 3. This Ordinance shall take effect immediately.

ORDINANCE NO. 174.

(Approved October 30, 1900.)

Providing for the Reference to the Chief Engineer of the Fire Department for the Purpose of Investigation and Report, of Applications for Permits to Erect and Maintain (1) Cupola Furnaces or Other Appliances for Melting Iron or Any Other Metal; (2) to Erect and Maintain Any Steam Engine and Boiler, or Steam Boiler; (3) to Erect and Maintain a Gas Engine on Any Story of a Building Other Than the First. Also Providing for a Reference to the Fire Marshal of Applications for Permits to Erect and Maintain Gasoline or Vapor Engines, or Any Engine or Boiler Using Crude Petroleum or Oil for Fuel, That Proper Conditions May Be Embodied in the Resolutions Granting Such Permits.

Section 1. All applications for the following permits, before final action is taken thereon by this Board, must be referred to the Chief Engineer of the Fire Department for investigation and report:

Applications for permission—

- (1) To erect and maintain or use any cupola furnace, or other appliance for melting iron or any other metal.
- (2) To erect and maintain any steam engine and boiler, or steam boiler.
- (3) To erect and maintain a gas engine on any story of a building other than the first.

Section 2. All applications for permits to erect and maintain gasoline or vapor engines or any engine or boiler using crude petroleum or oil for fuel shall, before final action is taken thereon by this Board, be referred to the Fire Marshal for investigation, and to report the conditions necessary to be embodied in the resolutions granting such privileges to the petitioners.

Section 3. This Ordinance shall take effect and be in force from and after its passage.

## ORDINANCE NO. 1023.

(Approved October 27, 1903.)

**Regulating the Erection, Maintenance and Use of Steam Engines and Boilers and Steam Boilers.**

Section 1. It shall be unlawful for any person, firm or corporation to erect, or cause to be erected, or to maintain or use, any steam engine and boiler or steam boiler, without permission from the Board of Supervisors; and such permission shall not be granted unless the applicant thereof shall file, in the office of the Clerk of the Board of Supervisors, with his application, a certificate of the soundness of such steam engine and boiler or steam boiler, signed by the manufacturer thereof or by a competent engineer, who must also be a competent boiler inspector; provided, however, that the provisions of this Ordinance shall not apply to the temporary erection, maintenance or use of any steam engine and boiler or steam boiler for building or construction purposes.

Section 2. All steam engines and boilers and steam boilers must be constructed, erected and maintained to the satisfaction of the Board of Public Works.

Section 3. Permits for the erection, maintenance and use of steam engines and boilers and steam boilers are not transferable and may be revoked at the pleasure of the Board of Supervisors.

Section 4. Any person, firm or corporation who shall violate any of the provisions of this Ordinance shall be guilty of a misdemeanor and, upon conviction thereof, shall be punished by a fine not to exceed five hundred (500) dollars, or by imprisonment in the County Jail for not more than six (6) months, or by both such fine and imprisonment.

Section 5. This Ordinance shall take effect and be in force immediately.

## ORDINANCE NO. 223. (New Series.)

Approved May 29, 1907.)

**Requiring All Private Water Tanks and Water Supplies to Be Connected so as the Fire Department May Use**

**the Same for Protection from Fire, and Repealing  
Ordinance No. 96 (New Series), Approved November  
15, 1906.**

Section 1. Any and all private water tanks and water supplies within, upon or about any building or premises capable of holding five thousand (5,000) gallons of water or over, shall be connected with a three (3) inch iron galvanized pipe leading from said water tank or water supply to a point outside of the building or premises designated by the Chief of the Fire Department.

Section 2. This Ordinance shall not apply to tanks used to supply automatic sprinkler equipments or to buildings which are supplied with hose reel standpipes of three (3) inches or larger, which lead from the water tank upon the roof or in the upper portion of the building supplying water to hose reels, providing said hose reel standpipes lead to a point outside the building designated by the Chief of the Fire Department.

Section 3. The outer end of all said pipes shall be connected with a three (3) inch gate valve, provided with cap and chain.

Section 4. Ordinance No. 96 (New Series), approved November 15, 1906, is hereby repealed.

Section 5. Any person, firm or corporation refusing to comply with any of the provisions of this Ordinance shall be guilty of a misdemeanor, and, upon conviction thereof, shall be punished by a fine not to exceed five hundred (500) dollars or by imprisonment in the County Jail for not more than six (6) months, or by both such fine and imprisonment.

Section 6. This Ordinance shall take effect and be in force from and after its passage.

**ORDINANCE NO. 698.**

(Approved April 15, 1903.)

**Providing for the Regulation of the Placing, Installing,  
Operating and Use of Electric Wires, Appliances, Apparatus,  
Construction or Equipment Connected to the Fire and Police Telegraph and Telephone Signal Systems in, on or About Buildings in the City and County of San Francisco, and for the Charges of Such Regulation.**

Section 1. Every corporation, copartnership or individual placing, installing or causing to be placed or installed, electric wires, appliances, apparatus, construction or equipment in, on or about any building in the City and County of San Francisco, in connection with either or both of the Fire or Police Telegraph and Telephone Signal Systems as provided for in Section 5, Chapter IX, Article IX, of the Charter of the City and County of San Francisco, shall pay to the Department of Electricity for such installation, construction, equipment or connection, and the maintenance thereof, the following fees, viz:

For each installation or connection, and the construction and equipment thereof, to either or both of the Fire or Police Telegraph and Telephone Signal Systems .....	\$5.00
For the maintenance and use of each of such installation, construction, equipment or connection, per month .....	\$1.00
For the maintenance and use of each additional part of such installation, construction, or connection per month .....	\$0.50

Provided, however, that the charge for such installation, construction, equipment or connection, shall be due and payable at the office of the Department of Electricity upon the completion of said installation, construction, equipment or connection, and the charge for the maintenance or use for each of such installations or connections, and additional parts thereof, shall be due and payable on the first of each and every calendar month.

Section 1a. In case the fees provided to be charged in Section 1 shall be less than the cost of making the necessary installation, then the entire cost of material and labor used in making such installation shall be paid by the person, firm or corporation in whose behalf the work is performed. All material so furnished or installed to be and remain the property of the City and County of San Francisco.—As added by Ordinance No. 1928 (New Series), approved June 19, 1912.

Section 2. Upon the failure or refusal of any corporation, copartnership or individual to pay at the

times specified herein, to the Department of Electricity, the charges as fixed herein, the Chief of the Department of Electricity shall, and he is hereby authorized to disconnect and remove the installation or connection and the construction and equipment thereof, of the corporation, copartnership or individual who shall have so failed or refused to pay said charges.

Section 3. It shall be the duty of the Chief of the Department of Electricity to turn all moneys received under this Ordinance into the Treasury of the City and County of San Francisco.

Section 4. Every corporation, copartnership or individual placing, installing, operating or causing to be placed or installed, or using electric wires, appliances, apparatus, construction or equipment connected with the Fire or Police Telegraph and Telephone Signal Systems of the Department of Electricity, shall appear in person or by duly authorized representative, at the office of the Department of Electricity and shall there register his name and address in said City and County, which act, upon being sworn, shall entitle him to a Certificate of Registration, which shall be his authority for being connected with said Fire or Police Telegraph and Telephone Signal Systems, provided, however, that no Certificate of Registration shall be granted for a period of more than one fiscal year or the unexpired portion thereof.

Section 5. It shall be unlawful for any corporation, copartnership or individual to place, install, operate or cause to be placed, installed or operated, any electric wires, appliances, apparatus, construction or equipment in, on or about any building of the City and County of San Francisco, having connection or being connected with the Fire or Police Telegraph and Telephone Signal Systems, without first obtaining a Certificate of Registration from the Department of Electricity, as provided herein, and said Certificate of Registration must be renewed within thirty days after the first day of July of each fiscal year.

Section 6. All material furnished and all work done in construction, reconstruction and repairs of all installations and connections as aforesaid made under the

provisions of this Ordinance, shall be by the Department of Electricity, and said material, construction and equipment shall be and remain at all times the property of said City and County.

Section 7. This Ordinance shall not be construed to relieve from or lessen the responsibility of any person being connected as aforesaid, for damages to any property or to any one injured by any defect therein; nor shall the City and County be held as assuming any such liability by reason of said Certificate of Registration issued by the Department of Electricity.

Section 8. Any corporation, copartnership or individual, or any officer or agent thereof, violating any of the provisions of this Ordinance, shall be deemed guilty of a misdemeanor, and upon conviction thereof, shall be fined not more than one hundred (100) dollars or be imprisoned for not more than ninety (90) days, or by both such fine and imprisonment.

Section 9. All Ordinances or parts of Ordinances, in so far as they conflict with the provisions of this Ordinance, are hereby repealed.

Section 10. This Ordinance shall take effect and be in force on and after its passage.

Section 11. The charge of installation, maintenance and use of such installation and each additional part of such installation, shall not apply to the members of the San Francisco Fire Department, the employees of the Department of Electricity, the Fire Marshal, the Underwriters' Fire Patrol and Inspection Bureau, the offices of the Pacific States Telephone and Telegraph Company, and the headquarters of the Veteran Volunteer Firemen's Association.—New section added by Ordinance No. 963. Approved September 16, 1903; amended by Ordinance No. 1047. Approved November 5, 1903.

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## ORDINANCE NO. 898. (New Series.)

(Approved October 8, 1909.)

**Regulating the Erection, Establishment and Maintenance of Cupola Furnaces, or Other Appliances for Melting Iron or Any Other Metal.**

Section 1. It shall be unlawful for any person, firm or corporation hereafter to erect, establish, conduct or maintain a cupola furnace, or other appliance for melting iron or any other metal within the City and County of San Francisco, without the permission of the Board of Supervisors of the City and County of San Francisco.

Section 2. Whenever application is made to the Board of Supervisors of the City and County of San Francisco by any person, firm or corporation to erect, establish or maintain a cupola furnace, or other appliance for melting iron or any other metal, the applicant shall cause to be posted conspicuously on the premises a notice to the effect that application has been made to the Board of Supervisors for the granting of such a permit; said notice to be posted immediately after the filing of the application, and to be kept posted until said application is finally granted or denied.

Section 3. Any person, firm or corporation who or which shall violate any of the provisions of this Ordinance shall be guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine not exceeding five hundred (500) dollars, or by imprisonment in the County Jail for a period not exceeding six (6) months, or by both such fine and imprisonment.

Section 4. This Ordinance shall take effect immediately.

## ORDINANCE NO. 3108. (New Series.)

(Approved February 16, 1915.)

**Regulating the Establishment and Maintenance of Automobile Parking Stations.**

Section 1. An "Automobile Parking Station" is hereby defined to be:

A lot of land, otherwise vacant, on which automobiles

may be placed or stored, and kept and maintained for public use and for which a charge is made for such placing and storing.

Section 2. It shall be unlawful for any person, firm or corporation to establish, equip or maintain an automobile parking station without first having obtained a permit therefor from the Board of Supervisors as provided by this Ordinance.

Section 3. Application for such permit shall be made in writing by the person, firm or corporation desiring the same and shall contain a description of the location of the premises sought to be used as such station, the dimensions of the lot and the name of the owner of the premises. Accompanying the application shall be a diagram of the lot wherein shall appear the entrances and exits, all structures, fences or other improvements intended, and the character of the floor to be placed therein, and the character of contiguous structures. A notice, printed in conspicuous type, signed by the Clerk of the Board of Supervisors, stating that application has been made for such permit and stating the date when such application would be heard by the proper committee of said Board, shall be conspicuously posted on the premises described in the application for at least ten days prior to the date of such hearing. All applications for parking permits shall be referred to the Fire Marshal for investigation and report thereon.

Section 4. Repealed by Ordinance No. 3181 (New Series), approved April 6, 1915.

Section 5. No building or structure for the housing or storage of automobiles shall be erected or maintained on or in any automobile parking station as defined by this Ordinance.

Section 6. At the hearing of such application any person may object to the granting of such permit and may be heard in respect thereto.

Section 7. The Board of Supervisors may grant the permit applied for or may, in the exercise of a sound and reasonable discretion when the public interest may require, deny the same. All permits granted shall be revocable at the will of the Board.

Section 8. The following rules and regulations, to be inserted in any permit granted hereunder, shall govern the maintenance of automobile parking stations and shall be strictly observed.

A. The lot on which such station is maintained shall be enclosed on all sides by a substantial fence, suitably painted, except where walls of buildings exist contiguous thereto, and such fence shall be not less than four nor more than twelve feet in height.

B. No automobile shall be placed within three feet of any building on adjoining land.

C. No automobile shall be operated or engine allowed to run except when entering or leaving the place.

D. There shall be constantly kept on hand at least four barrels of clean dry sand, placed in different parts of the station, each barrel to contain an iron scoop and available at all times for the extinguishment of fire and for absorbing any oil that may fall upon the floor. The use of sawdust for such purposes is forbidden.

E. The floor shall be of gravel, rock, earth, brick, or concrete.

F. No nuisance of any kind shall be permitted or committed on the premises. Proper toilets and urinals shall be provided whenever required by the Board of Health or Health Officer.

G. Exits and entrances shall be at least 15 feet in width.

H. The interior of the station shall be lighted so that it shall contain no dark or obscure places.

I. The station shall be kept in a clean and sanitary condition, and no additional fire hazard shall be permitted to be maintained.

J. The washing or repairing of automobiles shall not be allowed on the premises except that minor adjustments of motor cars may be made by the owner or chauffeur in charge thereof.

Section 9. Any person violating any of the provisions of this Ordinance shall be guilty of a misdemeanor, and upon conviction thereof shall be subject to a fine of not

less than ten dollars nor more than one hundred dollars, or by imprisonment in the County Jail for not more than thirty days, or by both such fine and imprisonment.

Section 10. This Ordinance shall take effect immediately.

ORDINANCE NO. 1510 (New Series).

(Approved March 21, 1911.)

**Regulating the Installation and Operation of All Electrical Apparatus and Appliances Used in the Conduct, Operation and Maintenance of Moving Picture Exhibitions in the City and County of San Francisco.**

Section 1. All electrical appliances and apparatus used in connection with or necessary for the operation of moving picture exhibitions, shall, with the exception of that provision relating to and restricting the use of motors for the purpose of operating moving picture machines, be in conformity with the rules and regulations set forth in what is known as "National Electrical Code," said code being rules and requirements for the installation of electrical wiring and apparatus for electric light, heat and power, as the same are now established, and the said rules and regulations together with amendments and changes made therein from time to time, and also any rules and regulations now established or that may be made from time to time by the Department of Electricity of the City and County of San Francisco, are hereby adopted and approved.

Section 2. It shall be unlawful for any person, firm, corporation or association to install, cause or permit to be installed, or operated any motor or other device to operate a moving picture machine until a permit in writing therefor has first been granted by the Chief of the Department of Electricity, said permit to be posted in a conspicuous place in the operating room where said motor is being used, provided said permit shall be granted in all cases where the installation of the motor and the wiring thereof shall conform to all ordinances of the City and County of San Francisco.

Section 3. Permits to operate a moving picture machine with the aid of a motor shall be issued in the name of the owner or owners, shall not be transferable and may be revoked by the Chief of the Department of Electricity for any of the following reasons:

A. Failure of the person, firm, corporation or association to whom the permit is issued to maintain the electrical appliances and apparatus at a standard as required by the "National Electrical Code" and the Department of Electricity.

B. Failure of the person, firm, corporation or association to remedy within five (5) days any complaint on the electrical appliances and apparatus within or about the premises in which the moving picture exhibition is given.

C. Violation of the rules of the Department of Electricity of the City and County of San Francisco.

Section 4. It shall be unlawful for any person, firm corporation or association to keep locked during the hours in which a moving picture exhibition is open to the public the door or entrance to the booth or room within which the moving picture machine is operated.

Section 5. A. The operator must familiarize himself with the use of all the devices installed for the operation of the electric current in the operating room and the closing of all openings from the operating room into the main auditorium, and must see that all these devices are kept in perfect working order.

B. No waste paper, newspapers, old cloths, rags or anything of an inflammable character will be permitted in the operating room, provided, however, that this section shall not be interpreted to govern inflammable film when same are in course of operation or enclosed in an approved metal box.

C. The walls and floor of the operating room must at all times be kept clean, and no dust, dirt or other rubbish shall be allowed to accumulate.

D. Waste or wiping rags will not be permitted in the operating room unless kept in approved metal box.

E. An approved metal can or metal bucket, partially filled with water, must be placed in each operating room for the reception of waste carbon.

F. The operating room must not be used as a store-room, and no material whatsoever other than that required for the immediate operation shall be kept therein.

G. Under no circumstances shall the operator leave the operating room while a picture, slide or transparency is being exhibited, nor leave the operating room during an intermission, without first having disconnected the current from the arc lamp of the moving picture machine.

H. Burnt-out fuses must not be refilled or used, and no other fuses than Standard Fuses, approved by the "National Electrical Code" shall be used.

I. Approved protective devices, namely, fireguards to protect open film coming from upper magazine and fireguards to protect open film coming into the receiving magazine, as well as automatic drop shutter to cover the aperture plate on the gates of all the moving picture machines must be provided.

J. It shall be unlawful for any person who is not at least twenty-one (21) years of age to operate a moving picture machine by motor in any place of public assemblage.

K. It shall be unlawful for any person, firm, corporation or association to employ for the purpose of operating a moving picture machine by motor in any place of public assemblage any person who is not at least twenty-one (21) years of age.

L. It shall be incumbent upon the owner of any place of public assemblage in which moving pictures are exhibited, or his, or its representatives, to visit the operating room at least once a week to see that the requirements of this Ordinance relative to the condition of the room are carried out, failure to do so placing the responsibility upon the employer or his or its representatives.

Section 6. Any person or persons, firm, corporation or association who shall violate any of the provisions

of this Ordinance shall, upon conviction thereof, be subject to a fine of not less than five (5) dollars, or more than one hundred (100) dollars, or by imprisonment in the County Jail for not more than six (6) months, or by both such fine and imprisonment.

Section 7. All orders or ordinances or parts of orders or ordinances in conflict with the provisions of this Ordinance are hereby repealed.

Section 8. This Ordinance shall take effect and be in force from and after its passage.

ORDINANCE NO. 1543. (New Series.)  
(Approved April 25, 1911.)

**Providing for the Lighting of Places of Amusement  
Where Moving Pictures Are Exhibited.**

Section 1. All places of amusement wherein moving pictures are exhibited for public entertainment and where an admission fee is charged shall, during the hours that the same be open to the public, be kept lighted and illuminated in an amount of light equal to the light diffused or radiated from six thirty-two candle power incandescent lights at a voltage of one hundred and ten, with a resistance of four hundred and forty ohms per lamp, in a room containing twelve hundred and fifty square feet of floor surface; provided, that in all such places of amusement hereafter to be constructed, erected or altered, such incandescent lamps shall be set a distance apart of not less than seven feet.

Section 2. Nothing herein contained shall require the use of electricity for the purpose of illumination, the reference to the same being put for the purpose of establishing the amount of light necessary in a room containing the number of square feet above set forth. If any place of amusement of the character above set forth contains less than twelve hundred and fifty square feet of floor surface, then the amount of light but not the degree of light may be reduced accordingly. If said places contain more than twelve hundred and fifty square feet, the amount but not the degree of light shall be increased accordingly.

Section 3. Every person, firm or corporation violating the provisions of this Ordinance shall be deemed guilty of a misdemeanor and upon conviction thereof shall be punished by a fine not exceeding \$500 or by imprisonment in the County Jail not exceeding six months, or by both such fine and imprisonment.

ORDINANCE NO. 990. (New Series.)

(Approved December 22, 1909.)

**Regulating the Installation and Maintenance of Wires  
Used for the Carriage of Electricity for Light, Power,  
Telephone, Telegraph, Messenger, or Signal Service,  
Installed in Buildings Within the Fire Limits of the  
City and County of San Francisco.**

Section 1. All wires hereafter installed in or on buildings or other structures within the fire limits of the City and County of San Francisco, and used for conducting electricity, shall be enclosed as thus installed in "National Code Conduit," or other approved armored conductors; provided, however, that such wires when used for telephone, telegraph, district messenger, call bell or similar systems, are exempted from the foregoing provisions.

Section 2. This Ordinance shall not prohibit temporary installations of other methods of electrical construction for decorative or display purposes, and the Department of Electricity is authorized to grant special permission for such temporary installation for a period not to exceed sixty (60) days.

Section 3. Any person, firm or corporation, at any time installing wires in violation of the provisions of the foregoing sections shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine not to exceed five hundred dollars (\$500.00), or by imprisonment in the County Jail for not to exceed six (6) months, or by both such fine and imprisonment.

Section 4. All Ordinances and parts of Ordinances which conflict with the provisions of this Ordinance are hereby repealed.

Section 5. This Ordinance shall take effect and be in force 60 days after the date of its passage.

ORDINANCE NO. 290. (New Series.)

(Approved October 16, 1907.)

Prescribing the Procedure Under and by Which Municipal Buildings Shall be Constructed and Authorizations Made for the Expenditure of Money to Defray the Cost of Such Construction.

Section 1. Whenever any department of the municipal government deems it necessary that a new building shall be constructed for the use of such department, the Board of Commissioners having the management of such department shall adopt a resolution declaring such necessity and in general terms describe the character of the building required, and state the site upon which the same is to be erected. Such resolution shall be delivered to the Board of Public Works and upon the receipt thereof the said Board of Public Works shall cause to be made an estimate of the probable cost of the building required. When such estimate shall have been made the Board of Public Works shall transmit to the Board of Supervisors a general description of such proposed new building and said estimate of cost, together with a request that said Board of Supervisors appropriate and set aside a sum stated to defray the cost of the preparation of plans and specifications for such proposed new building.

Section 2. Upon the appropriation and authorization for the expenditure of said sum for the preparation of plans and specifications the Board of Public Works shall forthwith proceed to prepare the necessary plans and specifications for such proposed new building, and when the same shall have been completed shall transmit the same to the department for whose use the same is designed. Such department may adopt said plans and specifications or may suggest such changes or modifications as may be deemed proper. Any suggested changes or modifications may be made by the Board of

Public Works until such plans and specifications are satisfactory to the department requiring the building, and when so satisfactory, shall be approved.

Section 3. Upon such approval said plans and specifications shall be transmitted to the Board of Supervisors for its approval, and upon such approval being given, the Board of Supervisors shall authorize the expenditure of the sum necessary for the preparation of the detailed plans and drawings and necessary supervision of the work of construction, which (including the cost of the preparation of the contract, plans and specifications) shall not exceed five per centum of the entire cost of the building to be constructed, and shall also authorize the expenditure of the sum necessary for its construction, and authorize the Board of Public Works to enter into a contract for such construction.

Section 4. This Ordinance shall take effect immediately.

ORDINANCE NO. 2269. (New Series.)  
(Approved May 12, 1913.)

**Authorizing the Board of Public Works in Its Discretion to Obtain Plans, Drawings, Specifications and Details for the Erection of Public Buildings to Be Erected Under the Supervision and Direction of the Board of Public Works from Architects, and Providing for the Compensation of Such Architects, and Repealing Ordinances No. 291 (New Series), Approved October 16, 1907, Entitled "Confirming Certain Powers Granted by Section 3 and Subdivision 9 of Section 9 of Chapter 1 of Article VI of the Charter of the City and County to the Board of Public Works, and Prescribing How and by Whom Certain Duties Are to Be Performed in Respect to the Construction and Repair of Public Buildings and the Compensation to Be Paid for Services Rendered Under the Provisions of This Ordinance and Repealing Ordinance No. 49 (New Series), Amendatory Thereof.**

Section 1. The Board of Public Works is hereby authorized in its discretion to obtain plans, drawings, specifications and details for the erection of public

buildings for the City and County of San Francisco to be erected under the supervision and direction of the Board of Public Works and for that purpose to engage the services of architects either by selection or by competition. The method of competition, in case the architects for the purpose herein specified are selected by competition, shall be determined by the Board of Public Works. The Board of Public Works is hereby authorized to pay for the preparation of detailed plans and drawings and necessary supervision of the work of construction, a sum which (including the cost of the preparation of the contract, plans and specifications) shall not exceed six per centum of the entire cost of the building to be constructed. The Board of Public Works shall retain such supervision of the plans and specifications for and of the construction of such public buildings as said Board of Public Works shall deem necessary and proper. The Board of Public Works is hereby further authorized to enter into a contract or contracts with architects for the purpose of engaging the services herein contemplated.

Section 2. Nothing herein contained shall be deemed or construed as preventing the Board of Public Works from appointing a City Architect or such persons as said Board of Public Works may deem necessary to perform architectural services for the City and County of San Francisco or to inspect and supervise the construction of public buildings, the intent and purpose of this Ordinance being to place in the discretion of the Board

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of Public Works the manner and method of obtaining plans and specifications for public buildings and the supervision of the construction thereof.

Section 3. All Ordinances or parts of Ordinances in conflict herewith are hereby repealed.

Section 4. Ordinance No. 291 (New Series), approved October 16, 1907, and Ordinance No. 49 (New Series), amendatory thereof, are hereby repealed.

Section 5. This Ordinance shall be in force and effect immediately.

#### ORDINANCE NO. 4412. (New Series.)

#### Regulating the Construction and Use of Buildings Used as Automobile Repair shops; Regulating and Providing for the storage of Gasoline in Connection therewith; Safety Regulations for Automobile Repair Shops; Penalties.

(Approved Dec. 17, 1917.)

Section 1. **“Definitions.”** The following terms shall have the following meaning wherever used in this Ordinance.

(A) “An automobile repair shop,” is a building where one or more automobiles of any make, size or description are taken into said building and a charge is made for repairing any part of the motor, engine, or any part of the machinery or driving part connected with the motor engine in any manner.

(B) “Gasoline,” shall mean any product of petroleum that will flash or emit an inflammable vapor below a temperature of one hundred and ten (110) degrees Fahrenheit. The Fire Marshal shall decide the flashing point.

(C) “Approved” shall mean approved by the Fire Marshal.

Section 2. It shall be unlawful for any person or persons, firm, company or corporation hereafter, from the date of the passage of this Ordinance, to establish, conduct or operate an automobile repair shop where any part or portion thereof is used or occupied as a hotel, tenement house, apartment house, romeo flat, rooming house or lodging house, hall or place of public assembly.

Section 3. No automobile repair shop shall hereafter be established, conducted or operated, unless said automobile repair shop is constructed of brick or concrete, or of slow burning material, described as follows: The walls shall be of masonry, terra cotta or tile from the floor of the first story to the bottom of the upper or second story floor joists; if of one story in height, to the roof; the ceiling shall be of the same construction or of not less than one (1) inch of plaster on metal lath; all roofs shall be fireproof. The floor shall be of concrete. If desired a wood floor, of not more than one (1) inch in thickness may be laid on the concrete floor, where necessary to protect the workmen from the concrete floor.

No stairs shall lead from the inside of an automobile repair shop to the floor above, unless they be enclosed with a fireproof partition from floor to ceiling, with a fireproof door.

All windows and skylights shall be of wire glass with metal frames; the skylight shall be secured so as to be easily removed by the Fire Department when necessary to extinguish a fire.

Section 4. Whenever any portion of a building occupied and used as an automobile repair shop at the time previous to the passage of this Ordinance shall become damaged by fire to the extent of more than twenty-five (25) per cent of its value above the foundation walls, said repair shop shall not again be operated as an automobile repair shop unless all that portion of the building so occupied as an automobile repair shop fulfills all requirements of this Ordinance and the same have been complied with; the said damage to be determined by the Board of Public Works.

Section 5. **“Storage of Gasoline.”** This section shall apply to all automobile repair shops now being operated or hereafter to be operated. One approved five (5) gallon can of gasoline or distillate or fifty (50) gallons of gasoline or distillate kept in an approved portable filling tank, commonly called a gasoline buggy, may be stored or kept inside of an automobile repair shop.

One storage tank of gasoline or distillate with a capacity not greater than three hundred (300) gallons, may be stored outside of an automobile repair shop, close to the curb line of the sidewalk; the top of said storage tank shall be at least four (4) feet below the sidewalk, the space between the top of the tank and the sidewalk shall be filled with earth.

The approved portable filling tank or buggy and the storage tank shall be constructed of not less than No. 12 U. S. Standard Gauge, galvanized steel oxy-acetylene or electric welded, or riveted steel to steel joints, with rivets not more than one (1) inch apart from the centers; the approved portable filling tank or buggy shall be mounted on all metal wheels with rubber tires. Or they may be constructed of iron not less than three-sixteenths (3/16) of an inch in thickness, riveted and caulked. The portable filling tank or buggy shall be soldered and painted; the storage tank shall be covered with rust-resisting material.

All pipes shall lead out of the top of the storage tank, consisting of a filling pipe, suction pipe and a one (1) inch vent pipe; the vent pipe shall extend up in front of the building capped with return bend covered with a fine brass wire mesh. All pipes shall be galvanized. All storage tanks and portable filling tanks or buggies must be approved.

No storage tank shall be covered with earth until inspection has been made, or permission granted to do so by the Fire Marshal.

The gasoline or distillate shall be pumped from the storage tank and the approved portable filling tank or buggy. No gravity, siphon or pressure system of any kind shall be allowed in removing the gasoline or distillate from the storage tank or from the approved portable filling tank or buggy. All pumps to be close valved.

Before any gasoline or distillate shall be stored in, upon or about any automobile repair shop, application must be made to the Fire Marshal, naming the number of gallons desired; the Fire Marshal shall grant the application, provided the applicant complies with all of the provisions and requirements of this Ordinance.

All storage tanks and portable filling tanks or buggies must be filled in the day time. In no case shall any barrel or drum of gasoline or distillate, empty or otherwise be allowed in, upon or about the premises of an automobile repair shop.

Section 6. **“Safety Regulations.”** This section shall apply to all automobile repair shops now being operated or hereafter to be operated.

The approved portable filling tank or buggy shall be kept at all times near a door leading into the street, so as to be readily removed from the premises in case of fire.

(A) Under no condition shall any gasoline or distillate be permitted for any purpose to remain over night in any open can or receptacle.

(B) At least four (4) iron buckets filled with dry sand shall be kept on hand at all times, placed in different parts of the automobile repair shop, easy of access, so as to be readily thrown upon a gasoline or oil fire. Also sand shall be used for absorbing oil that may fall upon the floor; such sand when saturated shall be removed from the premises. The use of sawdust for absorbing oils or gasoline is strictly prohibited.

(C) All oily waste, rags or rubbish of any kind shall be kept at all times in metal receptacles with tight fitting covers.

(D) No gasoline or distillate shall be put into or taken out of any automobile near which there is an open light or fire of any kind.

(E) No gasoline or distillate shall be used for motive power to supply any engine or operate any machinery to be used for the repairing of automobiles.

(F) No light of any kind other than electricity shall be used for illuminating purposes. All portable electric bulbs shall be protected with a strong wire covering.

(G) All electric motors not actually a part of an automobile shall be located at least four (4) feet above the floor.

(H) Not less than one (1) chemical fire extinguisher, of not less than three (3) gallons capacity, or other fire extinguishers which have been approved, shall be kept at all times where easy of access, in good condition, in every automobile repair shop.

(I) All machinery of an automobile must be shut off and the motor dead, and all lights of an automobile extinguished, while gasoline or distillate is being put into or taken out of the reservoir of an automobile.

Section 7. It shall be the duty of any and all members of the Board of Fire Wardens to see that all of the provisions and regulations of this Ordinance are strictly complied with, and for that purpose shall have access at all times to any and all buildings operated as automobile repair shops.

Section 8. **“Penalty.”** Any person or persons, firm, company or corporation that violates, disobeys or refuses to comply with any of the provisions or requirements of this Ordinance shall be deemed guilty of a misdemeanor, and, upon conviction there of, shall be punished by a fine of not less than ten (10) dollars nor more than fifty (50) dollars or by imprisonment in the County Jail for not more than thirty (30) days, or by both such fine and imprisonment, and such person, firm, company or corporation shall be deemed guilty of a separate offense for each and every day that such violation, disobedience or refusal shall continue and shall be subject to the penalties imposed by this Ordinance for each and every separate offense.

ORDINANCE NO. 4537. (New Series.)

Approved March 26, 1918.

**Regulating the Storage of Combustibles and Acids and  
Repealing Ordinance No. 2351 (New Series), Approved  
July 9, 1913.**

Section 1. No tenement house, apartment house, hotel, lodging house, rooming house, hall or place of public assembly, nor any part thereof, nor the lot upon which it is situated, shall be used as a place of storage, keeping or handling of any explosives, inflammable oils,

hay, straw, excelsior, paper stock, feathers or rags. This section shall not apply to drug stores, wherein explosives and inflammable oils are kept and stored for sale for medicinal purposes.

Section 2. No person, firm, company or corporation shall store or keep in any building more than one carboy of nitric, muritaic or sulphuric acid, unless the same be stored and kept in a fireproof acid room, the walls of which shall be constructed of brick, concrete, terra cotta or tile from the floor to the bottom of the floor joists above; the ceiling shall be of the same construction, or of not less than one inch of plaster on metal lath. All swinging doors shall be arranged to swing outward and to close automatically; sliding doors shall overlap the wall at least four inches at sides and top. There shall be a sill constructed of brick or concrete, rising not less than nine inches from the floor. The floor shall be of concrete and where possible shall be connected with the sewer with an iron-stone pipe. Where it is impossible for a basement to be connected with the sewer, a sump shall be constructed at the lowest point of the acid room, capable of containing two carboys of acid. All doors shall be covered with galvanized iron on both sides, or may be constructed according to the fire door requirements of the Board of Fire Underwriters of the Pacific. All windows shall be of wire glass not less than one-quarter inch thick, set in metal frames or wood frames covered with galvanized iron. All acid rooms shall be vented to the open air. If the acid room is in a basement the ceiling shall be connected with a floor pipe casing, passing through the first floor and ceiling. All acid rooms shall be protected on the inside by a sprinkler system, or in lieu of the sprinkler system, a sprinkler head or open spray shall be located in the center of the ceiling, connected with a one-inch water pipe with a valve, such valve to be located on the outside of said acid room as designated by the Chief of the Fire Department.

This section shall not apply to manufacturers of acids.

Whenever acid is stored in an open lot, said lot shall be enclosed with a fence.

All acid rooms shall be plainly lettered on the outside with letters not less than three inches, "ACID STORAGE."

Section 3. Any person, firm, company or corporation who shall violate or refuse to comply with the provisions of this Ordinance shall be guilty of a misdemeanor and upon conviction thereof shall be punished by a fine of not less than ten dollars nor more than one hundred dollars, or by imprisonment in the County Jail for not more than three months, or by both such fine and imprisonment; and each such person, firm, company or corporation shall be deemed guilty of a separate offense for every day such violation or refusal shall continue, and shall be subject to the penalty for each and every separate offense.

Section 4. Ordinance No. 2351 (New Series), approved July 9, 1913, is hereby repealed.

**BILL NO. 5606. Ordinance No. 5227. (New Series.)**  
**Limiting the amount of sub-sidewalk space to be used as basements to buildings in certain streets and reserving space beneath sidewalks for public use.**

Section 1. No permit shall hereafter be issued by any officer, board or commission of the City and County to occupy, use or make construction in any space beneath the surface of any sidewalk area within the street lines of Van Ness avenue from Market street to North Point street, Market street between Sixth street and Castro street, Eleventh street from Market street to Division street, Division street from Eleventh street to Potrero avenue and Potrero avenue from Division street to Twenty-fifth street, excepting in the space lying contiguous to the property line and extending along a line parallel thereto and ten feet distant therefrom. The remainder of the space beneath such sidewalk area is hereby expressly reserved for public use.

**BILL NO. 5609. ORDINANCE NO. 5230. (New Series)  
Regulating the Business of Doing Electrical Installation, Fixture and Connection Work and Providing for the Registration and Examination of Persons Engaged in the Same, and Creating an Examination Board, and Providing a Penalty for a Violation Thereof.**

Be it ordained by the People of the City and County of San Francisco, as follows:

Section 1. On and after the passage of this Ordinance every person, firm or corporation engaged in the business of installation or repair of electrical apparatus, wiring or other electrical appliances or connection work, whether original work or alterations, within buildings in the City and County of San Francisco, shall register or cause to be registered, his or its name, location of place of business and business address at the office of the Department of Electricity, and it shall be the duty of every such person, firm or corporation, so engaged in such business, to renew such registration on or before the second day of January of each succeeding year, should such person, firm or corporation remain in such business after the first registration hereunder; provided, however, that all who were licensed electricians in San Francisco on the 1st day of July, 1920, shall be exempt from any further examination, but shall be required to be reregistered upon the expiration of their present license and shall pay for the first year of registration a fee of fifty (50) dollars.

Section 2. On or after sixty days from the passage of this Ordinance, it shall be unlawful for any person to do, or attempt to do, except as hereinafter provided, any electrical installation, fixture or connection work, whether original work or alteration, within any building in the City and County of San Francisco, whether it be done as overseer, boss or foreman, without first undergoing before a Board an examination as to his competency as an electrician or electrical worker and procuring from such Board certificate thereof. Said Board of Examination shall consist of the Chief Engineer of the San Francisco Fire Department, the Chief of the Department of Electricity and the Chief

Building Inspector of the Board of Public Works. Such Board shall organize, adopt rules and regulations for its guidance, and elect one of its members to be President and another its Secretary. An affirmative vote of a majority of such Board at a regular or special meeting thereof shall be sufficient to authorize the issuance of such certificate to any applicant therefor upon such examination, such certificate to be signed by the President and Secretary of such Board.

Section 3. The Board shall have the power and it shall be its duty to cancel and annul the certificate provided for in Section 2 of this Ordinance, of any person holding the same, should it ascertain that such person or persons have done, or habitually do any work, whether as overseer, boss or foreman, not in strict accordance with approved electrical methods, or which said Board may regard as dangerous to property or life, and it shall be unlawful for any such person, whose certificate has been so canceled or annulled, to again engage in such work until he has been reinstated by the Board of Examination and a new certificate issued to him.

Section 4. Upon filing at the office of the Department of Electricity his application for an examination, as provided in Section 2, the applicant shall pay a fee of fifty dollars, and such examination shall be held by the Board of Examination not more than thirty days after the filing of the application, of which the applicant shall receive at least three days' notice.

Section 5. Any person, firm or corporation found guilty of a violation of this Ordinance, or of any section thereof, shall be deemed guilty of a misdemeanor, and upon conviction thereof, shall be punishable by a fine of not exceeding two hundred dollars, or by imprisonment in the County Jail for a period not exceeding ninety days, or both such fine and imprisonment.

Section 6. All ordinances and parts of ordinances in conflict with the provisions of this Ordinance are hereby repealed.

Section 7. This Ordinance shall take effect immediately.

**Finally passed—Board of Supervisors, San Francisco,  
September 16, 1920.**

**BILL NO. 5561. ORDINANCE NO. 5192. (New Series)  
Regulating the Installation, Construction, Operation and  
Inspection of Electrical Wires, Fixtures, Appliances  
and Apparatus in, on or About Buildings or Other  
Structures in the City and County of San Francisco,  
Fixing a Standard Therefor, Providing for the Grant-  
ing of Certificates to Master Electricians and Fixture  
Men and for the Revocation Thereof; and Providing  
for the Condemnation of Electrical Work, Installation,  
Fixtures or Apparatus Not in Conformity Herewith  
and Forbidding the Furnishing of Electrical Current  
to Said Condemned Electrical Installation and Fixing  
Penalties Therefor.**

Be it ordained by the People of the City and County  
of San Francisco as follows:

Section A. Every person, firm or corporation placing, installing, erecting or contracting to place, install or erect any electrical wires, fixtures, appliances, apparatus or construction shall, before commencing or performing any such work or installation, pay such license fee as may be prescribed by ordinance and appear in person, or by duly authorized agent, at the office of the Department of Electricity, and, upon presentation of his said license, where one is required by ordinance, be entitled to the registration of his or their name and place of business in the said City and County of San Francisco, in the class to which his or their business entitles them, and to a certificate from said Department of Electricity to engage in the electrical business or work as above stated; provided that no such certificate shall be granted by the Department of Electricity for a longer period than the date of the expiration of aforesaid license; and provided further than no such certificate shall be granted by the Department of Electricity to any person, firm or corporation whose certificate has been previously revoked under the requirements of this Ordinance within a period of one year from the date of such revocation; and provided further that no such certificate shall be granted by the Depart-

ment of Electricity to any person, firm or corporation who shall be deemed by the Department of Electricity unfit or unable to properly perform the work or discharge the obligations imposed upon the holder of such certificate to do electrical work.

Section B. Certificates to engage in the business of placing, installing, erecting or contracting to place, install or erect any electrical wires, fixtures, appliances, apparatus or construction in or on buildings or other structures shall be issued upon the payment of the license fee wherever such license fee is required by Ordinance to:

1st. "Master Electricians," which include every person, firm or corporation placing, installing or erecting or contracting to place, install or erect any electrical wires, appliances, apparatus or construction for hire or in the premises of another person, firm or corporation; excepting "Master Fixture Electricians" and "Repairing Electricians" as defined in this section.

2nd. "Master Fixture Electricians" shall include every person, firm or corporation engaged in the business of hanging or installing electrical or combination electrical and gas fixtures, and does not include the privilege of installing electrical work other than the connection of said fixtures to the wiring of a building or other structure.

3rd. (Repealed by Ordinance 5232, approved by the Board of Supervisors Sept. 17, 1920.)

4th. "Plant Electrician" includes every person, firm or corporation placing, installing or erecting any electrical wires, fixtures, appliances, apparatus or construction on his or its own premises by means of employes directly employed by said person, firm or corporation for the purpose of performing said electrical work.

5th. "Owner Electrician" shall include every person, who by his own labor in his own premises, places, installs or erects any electrical wires, fixtures, appliances, apparatus or construction.

Section C. Every person, firm or corporation shall, before placing, installing or erecting any electrical wires, fixtures, appliances, apparatus or conductors, or to electrically connect any electrical wires or con-

ductors together or to any electrical machinery, in or on buildings or other structures, file with the Department of Electricity a written application for a permit to proceed with such work, the aforesaid application for permit shall be accompanied by a brief specification showing the kind and nature of the proposed electrical apparatus, wires, fixtures, appliances or construction and the location and description of the premises wherein the work or installation is to be performed. Said permit shall be conspicuously posted on the premises wherein said electrical work or installation is being done; provided, however, that no such permit to proceed with such work or installation shall be issued by the Department of Electricity to any person, firm or corporation that has not received a certificate to do business in conformity with the terms of this Ordinance.

Provided further that it shall not be necessary to obtain a permit for minor repairs or replacements, or extensions to existing electrical installations where said extensions do not extend over six (6) feet in point of distance from the original outlet, and do not materially increase the load.

No person, firm or corporation registered as "Master Electrician," "Master Fixture Electrician" or "Repairing Electrician" shall file an application for a permit to do electrical work with the Department of Electricity unless said person, firm or corporation is in fact the contractor for such work.

The Department of Electricity is empowered to cancel permits on which no work has been performed within sixty (60) days from the date of issuance of said permit.

Section D. Every person, firm or corporation obtaining a certificate as "Master Electrician" or "Master Fixture Electrician" may, upon issuance of said certificate, deposit with the Department of Electricity the sum of One Hundred Dollars (\$100) in cash as a guarantee for the payment of all fees for permits or inspections that may become due and be owed by said certificate holder to the City and County of San Francisco, and as a further guarantee that all electrical work done under the authority of said certificate will

be done in compliance with all the provisions and requirements of all the ordinances applicable thereto.

Section E. It shall be unlawful to conceal, or cause to be concealed, any wires, apparatus, appliance or construction, in or on any buildings or other structures before same has been inspected by the Chief of the Department of Electricity or his authorized representative, and his approval posted on the building or other structure wherein same is installed.

Section F. Every person, firm or corporation placing, installing or erecting any electrical wires, fixtures, appliances, apparatus or construction, or electrically connecting any electrical wires or conductors together, or to any electrical machinery, in or on buildings, or other structures, shall notify the Chief of the Department of Electricity when same is completed. The Chief of the Department of Electricity, or his authorized representative, shall inspect the same, and if in compliance with all ordinances shall issue to the said person, firm or corporation a certificate of approval. Said certificate shall contain the date of inspection and in concise terms specify the electrical wires, fixtures, appliances, apparatus or construction thus approved.

Said certificate of approval shall be issued for the installation or erection of the wires, apparatus or fixtures for which a permit has been issued.

No current shall be supplied to such installation until certificate be issued; nor shall any change, alteration or extension be made in the wiring of the building without notifying the said Chief and securing a permit therefor.

Section G. The failure, neglect or refusal on the part of any person, firm or corporation, for the period of ten (10) days after receipt of a notification so to do in writing, by the Chief of the Department of Electricity, to correct, obviate or remove any fault, error or deficiency in placing, installing or erecting any electrical wires, fixtures, appliances, apparatus or construction, or in electrically connecting any electric wires or conductors together or to any electrical machinery, appliances, apparatus or fixtures in or on any building or structure in the City and County of San Francisco

to conform with the provisions of all Ordinances of this City and County and in all other respects to conform with the best known general standard existing at such time, shall be deemed sufficient cause for the Chief of the Department of Electricity to revoke the offending party's certificate to transact business under the provisions of this Ordinance, and the Chief of the Department of Electricity is hereby specifically authorized and directed to revoke such certificate.

Section H. Any corporation, co-partnership, association or individual, or agent thereof, owning, operating or in the possession of any building or other structure within the limits of the City and County of San Francisco, shall permit the Inspector of the Department of Electricity to enter such plant or premises as often as shall be deemed necessary by the Chief of the Department of Electricity for the purpose of inspecting the electrical wiring, fixtures, appliances, apparatus, construction or equipment in or about said plant, building or other structures, and it shall be unlawful for any occupant or owner of premises where any electrical wires, fixtures, appliances, apparatus, construction or equipment are used, or any person whatever to prevent or interfere with any Inspector in the discharge of his duties under this Ordinance; provided, however, that the said Inspector shall, upon the request of the owner or occupant of said premises, exhibit his authority to make such inspection, which shall be signed by the Chief of the Department of Electricity. Should the Chief of the Department of Electricity or any Inspector thereof find the installation of any electrical wiring, fixtures, apparatus, appliances, construction or equipment to be defective or not in accordance with the provisions of any Ordinance or the standard fixed herein, the same shall be condemned and the use thereof forbidden until the same be corrected. Upon the failure of any such corporation, co-partnership, association, individual or agent thereof owning or leasing any building or structure in the City and County of San Francisco to correct such defective and condemned electrical wiring, fixtures, apparatus, appliances, construction or equipment for a period of six

days after the receipt of notice in writing from the Chief of the Department of Electricity so to do, which notice shall specify in detail the corrections to be made, the said Chief of the Department of Electricity shall forthwith direct the corporation, co-partnership, association or individual, or agent thereof, supplying the electrical power for said connection to disconnect the same, and it shall be unlawful for any corporation, co-partnership, association or individual, or agent thereof, furnishing electric current, to furnish or renew said power supply without permission from the Chief of the Department of Electricity.

Section I. All buildings or other structures wherein electrical wires are to be installed without the additional protection of a metallic armor, the same may be installed by means of porcelain bushings where such wires pass at right angles to timbers, and where such wires are parallel with timbers they shall be supported on porcelain knobs; provided, however, that in no case shall a wire be nearer than one inch of the timbers. Where porcelain knobs and bushings are used the wire shall in all cases be treated as bare electrical wire and in no case shall the insulation of the wire proper be depended upon for perfect insulation. Where the use of non-metallic conduit is advisable nothing in this Ordinance shall be construed to prevent its use in connection with a knob and bushing installation.

Section J. In all cases where conductors for the carriage of electricity are required by law to be installed in metallic armor on the exterior of buildings or other structures (unless otherwise specifically provided for), or embedded in concrete, or for service wires in or on buildings, said conductors shall be installed in approved rigid iron conduit, the minimum wall thickness of which will be .100 inches and the minimum internal diameter .62 inches. Where said conductors are required to be installed in metallic armor in the interior of buildings and concealed (other than hereinabove set forth), said conductors may be installed in approved rigid iron conduit, or other approved armor, the material, weight and form of said other armor must be such as to afford under conditions likely

to be met in practice, protection substantially equivalent in all respects to that afforded by unlined rigid conduit. Where the installation or conductors in the interior of buildings is exposed, and required by Ordinance to be installed in metallic armor the same may be enclosed in approved rigid iron conduit, or other approved armor as hereinabove set forth; or where said installation is to be made on interior surfaces of buildings and is required by law to be installed in metallic armor the same may be installed either in rigid iron conduit or in any other approved armor as hereinabove in this section described, or in approved metal moulding constructed of iron or steel with backing at least .050 inch in thickness and with capping not less than .040 inch in thickness and so constructed that when in place the race-way will be entirely closed, thoroughly galvanized or coated with an approved rust preventive both inside and out to prevent oxidation. In all cases the entire metallic systems shall be effectively and permanently grounded. No conduit, other armor or metal moulding shall terminate other than in an approved and accessible metallic fitting and be continuous from fitting to fitting, and in all other respects to conform with the best known general standard existing at such time as installations are made.

Nothing in this section, however, shall be construed to prevent the use of metal troughing in the outline wiring of Class "A," "B" or "C" buildings for lighting or decorating purposes only, or in or on the marquis of buildings providing the same be constructed in a manner to afford protection against weather conditions and proof against moisture equivalent to that afforded by rigid iron conduit and provided said troughing be constructed of metal of not less than 24 U. S. Gauge in weight and thickness, and thoroughly coated inside and outside with two coats of approved rust preventive.

Section K. No group of receptacles exceeding 16 in number nor consuming more than 660 watts shall be dependent on one cut-out except in the following cases:

1. Circuits for decorative lighting, and footlights,

borders and proscenium side lights in theaters may be so arranged that no group or receptacles shall exceed 32 in number nor consume more than 1320 watts.

2. In all buildings, except dwellings and flats as same are now or may hereafter be defined in the Building Law of the City and County of San Francisco, in cases where wiring equal in size to No. 14 B. & S. gauge is carried directly into keyless sockets or receptacles, the location of which is such as to render unlikely the attachment of flexible cords thereto, the circuits may be so arranged that not more than 1320 watts (or 32 sockets or receptacles) will be dependent on the final cut-out. Where a single socket or receptacle is used on a circuit, the limitation of watts permissible on the final cut-out shall be the maximum capacity for which such socket or receptacle is approved.

Section L. Each and every electrical installation shall have a main service switch and cut-out installed to control service connections.

The service switch in buildings having a tradesmen's entrance may be installed immediately within the door of said entrance and not more than six feet therefrom and not more than seven feet from the floor. The switch and service cut-out installed at this point must be enclosed in an approved iron cabinet provided with a hinged door upon which shall appear the words "main service switch" in letters not less than one inch in height. In buildings not having entrances as described above, the main service switch and cut-out may be installed in an approved iron cabinet located at a point immediately within the main entrance of the building. The cabinet must be provided with a hinged door, as described above. In any building, a main service switch and cut-out operated by a remote control may be installed at the main switchboard, or at the meter board, and operated by a flush switch enclosed in a metal frame with a clear glass face not less than one-quarter inch thick, located in the main entrance. This switch must so operate and function the remote control switch as to disconnect the current.

Wires from controlling switch to the service switch must be encased in rigid conduit. Where the lower floor of a building is occupied by stores, the entrance to the upper stories shall be considered the main entrance. Public hall lights, exit lights and elevator motors must be so installed as not to be controlled by main service switch. All meters in each electrical installation must be installed at the same location as the main service switch unless a fireproof meter room is provided for the meters.

Section M. All wires hereafter installed in or on all buildings or other structures in the City and County of San Francisco except in dwellings and flats as the same are now or may hereafter be defined in the Building Law of the City and County of San Francisco, and used for the purpose of conducting electricity shall be inclosed in iron conduits or other armor as hereinabove set forth.

Section N. All electrical wires hereafter installed in or on all dwellings and flats as the same are now or may hereafter be defined in the Building Law of the City and County of San Francisco, shall be installed by means of porcelain knobs and bushings, except main service wires, which must be installed and inclosed in rigid iron conduit; provided, however, nothing in this section shall be so construed as in any way preventing the enclosing of all wires in iron conduit or other armor.

Section O. Nothing in this Ordinance shall be construed as in any way to regulate the installation of any wires, fixtures, appliances, construction or equipment of any telephone, telegraph, district messenger, call bell systems, or the connecting or disconnecting of any current measuring device, and the same are hereby exempted from any of the foregoing provisions, excepting that approved cut-outs or fuses must be provided where such wires enter or leave buildings.

Section P. Every person, firm or corporation holding a certificate as Master Electrician, Fixture Electrician or Owner Electrician, under the provisions of this Ordinance, shall, before a certificate of inspection as provided for in Section "F" of this Ordinance is issued

by the Department of Electricity, pay to the Department of Electricity for such inspection the following fees, viz:

For each outlet at which current is controlled or issued for 200 watts or under .....	\$0.15
For each fixture connection 15 cents or a flat fee of \$250 per annum.	
For each outlet at which current is controlled or is used for over 200 watts .....	.25
For each outlet used for outline, decorative, border, strip or foot lighting .....	.05
For one arc lamp .....	1.00
For each additional arc lamp .....	.50
For each motor of 1 horsepower or less .....	1.00
For each motor of more than 1 horsepower and not more than 3 horsepower .....	2.00
For each motor of more than 3 horsepower and not more than 8 horsepower .....	3.00
For each motor of more than 8 horsepower and not more than 15 horsepower .....	4.00
For each motor of more than 15 horsepower .....	5.00
For each generator of 1 kilowatt or less .....	1.00
For each generator of more than 1 kilowatt and not more than 3 kilowatts .....	2.00
For each generator of more than 3 kilowatts and not more than 8 kilowatts .....	3.00
For each generator of more than 8 kilowatts and not more than 15 kilowatts .....	4.00
For each generator of more than 15 kilowatts .....	5.00
For each heating appliance of 1 kilowatt or less .....	.25
For each heating appliance of more than 1 kilowatt and not more than 3 kilowatts .....	.50
For each heating appliance of more than 3 kilowatts and not more than 8 kilowatts .....	.75
For each heating appliance of more than 8 kilowatts and not more than 15 kilowatts .....	1.00
For each heating appliance of more than 15 kilowatts .....	1.50

Provided, however, as a minimum, the total amount of any bill of fees to be charged shall not be less than one (1) dollar.

Section Q. Repairing Electricians shall pay to the Department of Electricity an inspection fee of \$25.00 annually, payable upon the issuance of his or their annual certificate. Repairing Electricians shall file monthly with the Department of Electricity on the forms prescribed and furnished by said Department a statement showing the location of electrical repairs made or performed by said Repairing Electricians, giving the names, addresses and a brief description of the work.

Section R. Each person, firm or corporation to whom a certificate as Plant Electrician shall have been issued by the Department of Electricity shall pay to said Department an inspection fee of \$0.15 per kilowatt connected load, not including elevator motors in the premises for which the permit is issued and shall file monthly with the Department a statement showing the amount, character and size in kilowatts of all electrical appliances, apparatus or construction installed, and a report showing the character and amount of repair work done or performed upon the electrical appliances, apparatus or construction in the said premises; or, in lieu of an annual inspection fee, each person, firm or corporation, to whom a permit as Plant Electrician shall have been issued by the Department of Electricity, shall have the option of filing individual reports for each separate installation and pay thereon the fees prescribed by Section "P" thereof.

Whenever it shall appear to the Chief of the Department of Electricity that a person, firm or corporation, to whom a certificate as Plant Electrician shall have been issued by the Department of Electricity, has not faithfully filed individual reports for each installation of electrical work as required by this Ordinance, the said Chief shall at his discretion assess an annual inspection fee of 15 cents per kilowatt connected load, not including elevator motors in the premises for which the permit is issued, and the same shall immediately become a charge against said Plant Electrician.

Section S. When any corporation, co-partnership, association or individual, or agent thereof, after notice

has been given in writing by the Chief of the Department of Electricity, shall be found to have intentionally or negligently violated any of the rules or regulations established under this Ordinance or when, through any such violation, by corporation, co-partnership, association or individual, or agent thereof, doing the work, it is necessary to make extra inspection of the work, there shall be charged said corporation, co-partnership, association or individual, or agent thereof, for such extra inspection made necessary on account of such violation a fee of Two Dollars and Fifty Cents (\$2.50) for making such inspection, and for the inspection of electrical wires, appliances, apparatus, construction or equipment, for which no fee is herein prescribed, and for the inspection of temporary installation for decorative advertising, theatrical or similar purposes, there shall be charged to and paid by the corporation, co-partnership, association or individual, or agent thereof, installing such work, a fee not exceeding Two Dollars and Fifty Cents (\$2.50) per hour for the time actually consumed by each inspector making such inspection, previous to obtaining the necessary certificate of inspection as aforesaid.

Section T. It shall be the duty of the Chief of the Department of Electricity to turn all moneys received under this Ordinance into the Treasury of the City and County of San Francisco.

Section U. This Ordinance shall not be construed to relieve from or lessen the responsibility of any person owning, operating or installing any electrical wires, fixtures, appliances, apparatus, construction or equipment for damages to anyone injured by any defect therein, nor shall the City and County, or any agent thereof, be held as assuming any such liability by reason of the inspection authorized herein, or the certificate of inspection issued by the Department of Electricity.

Section V. Any person, firm, company or corporation that violates, disobeys, omits, neglects or refuses to comply with, or that resists or opposes the execution of any of the provisions of this Ordinance, shall be

guilty of a misdemeanor and upon conviction thereof shall be punished by a fine not exceeding Five Hundred (\$500) Dollars, or by imprisonment for not more than six (6) months, or by both such fine and imprisonment; and every person, firm, company or corporation can be deemed guilty of a separate offense for every day such violation, disobedience, omission, neglect or refusal shall continue, and shall be subject to the penalty imposed by this section for each and every separate offense.

Section W. Gas-filled incandescent lamps (1) must not be used in show-windows or in other locations where inflammable material is liable to come in contact with lamp equipment, except where used in connection with approved fixtures where temperature of any exposed portion of same does not exceed 200 degrees Fahrenheit (93 degrees Centigrade).

2. Must not be used in connection with medium base sockets or receptacles if of above 200 watts nominal capacity, nor with mogul base sockets or receptacles if of above 1500 watts capacity. Must not, if provided with a shade, reflector, fixtures or other enclosure above the socket, be used in fibre lined or similar sockets or receptacles of either medium or mogul base types if of above 100 watts.

3. Fixtures within buildings must be wired with conductors of approved slow burning or asbestos covering where the temperature to which wire is subjected at any point exceeds 120 degrees Fahrenheit (49 degrees Centigrade). Where fixtures are placed outside of buildings approved rubber-insulated wire is required.

Section X. Cut-outs and switches controlling branch circuits shall, as far as possible, be grouped at distributing centers, located in easily accessible places. Wherever branch cut-outs or switches are installed, they shall be enclosed in an approved cabinet. This shall include cut-outs at meter locations.

Section Y. All lights, fixtures and brackets within seven feet of grounded surfaces or in rooms which have running water or piping for same, must be con-

trolled by wall switches and must be provided with keyless sockets; provided that in basements porcelain key sockets may be used in lieu of wall switches and keyless sockets.

Section Z. Not more than one set of feed or service wire shall be installed in a single conduit. No service wire shall be smaller in size than No. 12 B. & S. gauge. Height of building permitting, no service wire shall be nearer to the ground than twenty feet, provided, however, that nothing in this rule shall apply to any service wire in the "underground districts." In making calculations for the proper size of service or feed wires, the following rules shall be observed: In all buildings or other structures where twenty or less branch circuits are installed, each circuit shall be assumed to be fully loaded. In all buildings or other structures where more than twenty circuits are installed the actual connected load shall determine the size of service or feed wire, but in no case shall the size be less than No. 4 B. & S. gauge.

Section AA. Ordinance No. 2582 (New Series) is hereby repealed.

Section BB. This Ordinance shall take effect immediately.

**Finally Passed—Board of Supervisors, San Francisco, June 28, 1920.**

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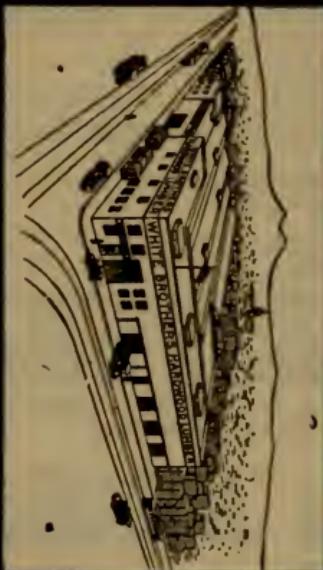
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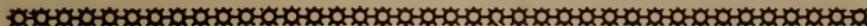
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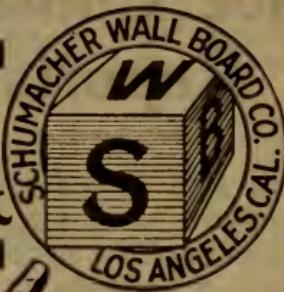
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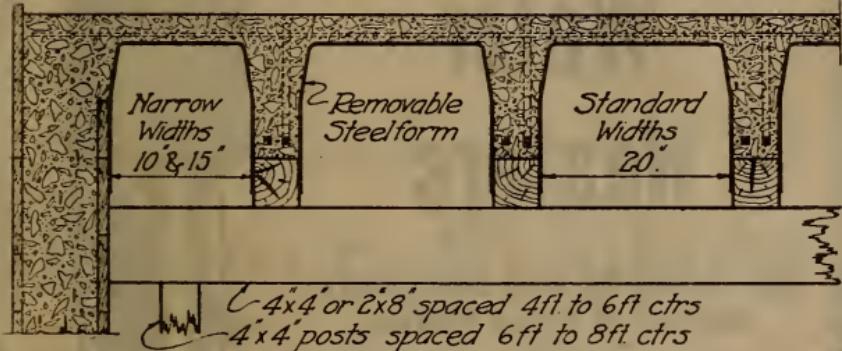
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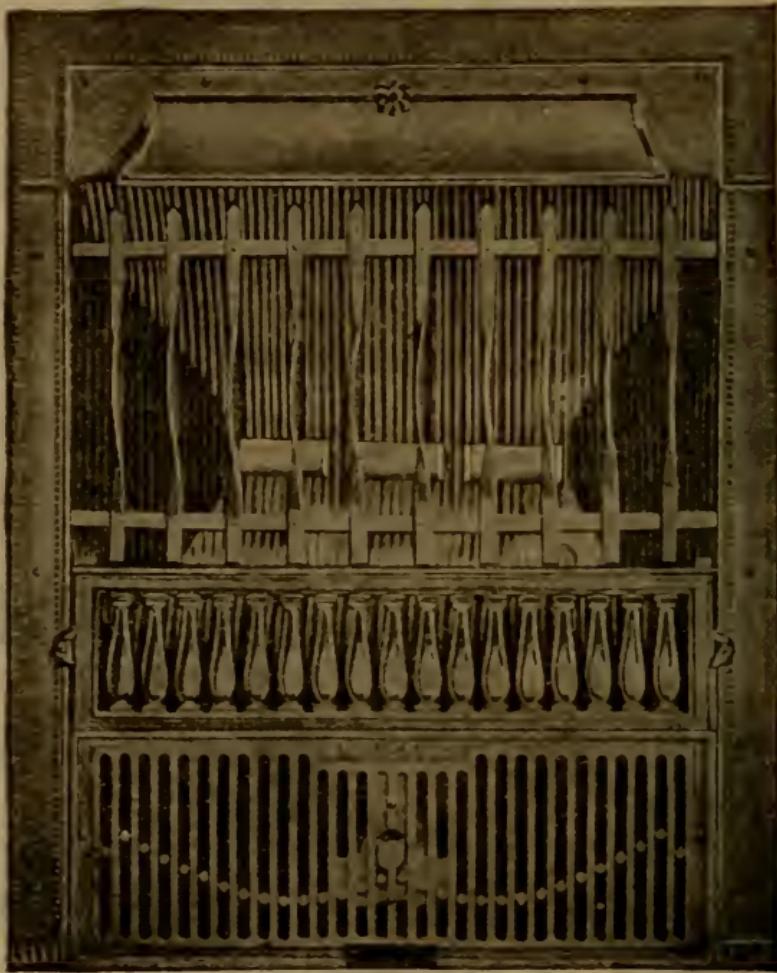
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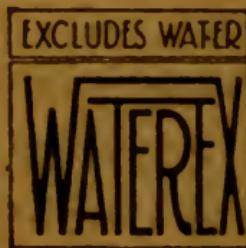
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